

Filling an instructional gap in an English for Academic Purposes course:  
Developing speech comprehensibility and autonomous learning with an  
electronic portfolio learning module

by

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## Abstract

Although researchers have indicated that speech production is an important aspect of academic success and acculturation (e.g., Berman & Cheng, 2001; Boonkit, 2010; Cheng & Fox, 2008) and teachers have identified the need for more preparation in this area (Thornbury, 2005), there is still a lack of time and practice devoted to the speech issues of international students in English for Academic Purposes (EAP) courses at the tertiary level (Fakeye, & Ogunsiyi, 2009; Maleki & Zangani, 2007; Wood, 2010; 2015, 2016). Many second language (L2) learners in academic programs have expressed frustration with the difficulty their listeners often have in comprehending what they say (Derwing & Munro, 2015). To address this perceived need to improve L2 comprehensibility, an electronic portfolio (ePortfolio) learning module was integrated into advanced level EAP courses at a medium sized Canadian University. The learning module was designed to guide learners to work more autonomously by diagnosing their own speech issues and finding ways to improve, using readily available resources on the internet. This was accomplished by scaffolding (Brunner, 1966) learners through a series of cyclical actions of reflection, inquiry, and integration (Eynon, Gambino, & Török, 2014). Thus learners were encouraged to engage in more autonomous learning (Reinders, 2011) by examining their performance, planning interventions, reviewing performance, and assessing improvement.

This dissertation research examined the impact of the ePortfolio learning module on 55 participants in developing speech comprehensibility and autonomous learning by applying a two-phased mixed methods explanatory sequential design (Creswell, 2015). In the first phase, quantitative data were collected through the use of a survey and a pre- and post-treatment test. Analysis included the computation of frequency counts and descriptive statistics to examine central tendencies, variability, and distributions of the study variables. In the second phase,

qualitative data (18 participant reflections, four semi-structured interviews) were analyzed using NVivo 12, a qualitative data analysis application that allows for the collection and coding of unstructured or semi-structured data. Codes used in the analysis were developed based on Saldaña's (2016) hypothesis coding technique. Information from both phases was used to assess the impact of the ePortfolio learning module on fostering autonomous learning in the context of improving speech comprehensibility.

Findings of the first phase indicated that speech comprehensibility improved through better learner management of volume or degree of loudness, speed, articulation, and word attack skills, and the lower the initial level of comprehensibility, the greater the improvement. Findings from the second phase indicated that over 90% of participants' comments were related to autonomous learning activities and that the more they engaged in autonomous learning, the greater the improvement in speech comprehensibility. Further, participants who improved the most were those who also applied the autonomous learning skills to other academic contexts. These findings suggest that the ePortfolio learning module was successful in filling the gap between the perceived need of L2 participants for support in developing speech comprehensibility and the limited amount of time available in the curriculum to address this need. It also had the added benefit of encouraging autonomous learning skills that learners reported were, to some extent, transferred to other academic learning contexts.

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### **Glossary of Terms**

Although these terms have been defined in many ways in the literature, within this dissertation I have applied the definitions listed in this glossary.

- Accent: “A particular pattern of pronunciation that is perceived to distinguish members of different speech communities” (Derwing & Munro, 2015, p. 5).
- Academic acculturation: “The processes of engagement within the situated, sociocultural practices of the university” (Cheng & Fox, 2008, p. 309).
- Affective factors: Emotional factors which influence learning such as anxiety, motivation, attitudes, and beliefs (Henter, 2014).
- Affordance: “The perceived and actual properties of a thing, primarily those functional properties that determine just how the thing could possibly be used. (Salomon, 1993, p. 51). In the context of this dissertation, the term refers to a “characteristic of an online space that facilitates or promotes learning” (Hartwick, 2018, p. 23)
- Articulation: The production of speech sounds (Kormos, 2006, p. xviii).
- Autonomous language learning: An act of learning whereby motivated language learners consciously make informed decisions about learning (Reinders, 2011, p. 48).
- Belief: “A proposition which may be consciously or unconsciously held, is evaluative in that it is accepted as true by the individual, and is therefore imbued with emotive commitment; further, it serves as a guide to thought and behaviour” (Borg, 2001, p.186).
- Communicative Language Teaching (CLT): The basic tenant is that “since the purpose of language is communication, using language to communicate should be central in all classroom language instruction” (Celce-Murcia, Brinton, & Goodwin, 2010, p. 8).

- Community of Practice: “Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger-Trayner, 2015).
- Concept: An abstract or generic idea generalized from particular instances.
- Construct: A *construct* is a name or label for a cluster or domain of related behaviors, attitudes, processes, and experiences. A construct derives its scientific value from the shared meaning it represents for different people. According to Cronbach and Meehl (1955), a construct is hypothetical, i.e., not directly observable, for which there exist multiple reference points, but none provides a complete definition. Cronbach and Meehl suggested that a construct definition should be based on a nomological network, or a set of interlocking system of laws that constitutes a theory. In accordance with Kerlinger and Lee (2000) the difference between a construct and a concept is that the construct is defined in such a way as it can be measured.
- Constructivism: An approach to learning that holds that learning takes place in the mind of the individual, and that “people actively construct or make their own knowledge and that reality is determined by the experiences of the learner” (Elliott et al., 2000, p. 256).
- Constructionism: Based on the theory of constructivism, but broader as it also allows for a focus on the development and evolution of ideas in different contexts. According to Berger and Luckmann (1966), constructionists’ view of knowledge and truth is that they are created by the participants rather than already in existence waiting to be discovered. Although concepts may be constructed, they can still correspond to something in the real world. Reality is defined socially, rather than individually, grounded in the subjective experiences of every-day life, rather than the objective reality of the natural world.

- Epistemology: The study or theory of the nature and grounds of knowledge, especially with reference to its limitations and validity. A distinction is made between three types of knowledge: declarative knowledge (knowledge of what); procedural knowledge (knowledge of how); and propositional knowledge (knowledge that – including ‘if-then’ statements (Riazi, 2016, p, 251).
- ePortfolio: A “web-based student-generated collections of learning artifacts (papers, multimedia projects, speeches, images, etc.) and related reflections, focused on learning and growth” (Eynon & Gambino, 2017, p.1).
- Fluency: According to Wood (2010) this term has often been vaguely defined and used in the literature to refer to different concepts, sometimes synonymous with speech proficiency or “effective spoken use of a language ... naturalness of flow of speech or speed of oral performance” (p.9). Segalowitz (2010) suggests that fluency may be separated into three types: *utterance fluency* or observable temporal features of speech; *cognitive fluency* or psycholinguistic processes underlying speech; and *perceived fluency* or the listener’s inferences of cognitive fluency from utterance fluency features. In this study, it refers to *utterance fluency* or the aspect of oral proficiency that is performance based, i.e., it is “the degree to which speech follows easily without pauses and other dysfluency markers” (Derwing & Munro, 2015, p. 5).
- Foreign Accent: Non-pathological speech (i.e., speech that is not affected by physical misshapes or disease) that differs in some noticeable respects from native speaker pronunciation norms (Derwing & Munro, 2015, p. 3).

- Formative assessment: Encompasses “all those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged” (Black & William, 1998, p. 7)
- Guided participation: “Echoes the notions of *scaffolding* (Bruner, 1966) and Vygotsky’s *zone of proximal development* (Vygotsky, 1978): that space within which a learner can perform an action (cognitive or rhetorical) *along with a skilled practitioner*, but not alone. The assumption is that by so performing an act along with the practitioner, the child will later be able to perform it alone: The intersubjective becomes the intrasubjective” (Freedman & Adam, 1996, p 398).
- Gradualist approach to developing learner autonomy: Autonomous learning is identified as a long-term goal to be developed over time with scaffolding and guidance from the teacher for both technical and psychological skills and strategies (e.g., Allford & Pachler, 2007; Pennycook, 1997; Reinders & White, 2011).
- Hypermedia: “Hypermedia refers to an associative, nonlinear information presentation and representation system built around a network of multimedia materials such as text, graphics, sound, animation, and motion. Hypermedia can provide a multidimensional learning environment where listening, speaking, reading, and writing can all be practiced in one environment. In such an environment, a learner is exposed to a wealth of different media, which creates a realistic context for language learning and makes the learning process more natural and intuitive. In other words, hypermedia technology can make the printed materials come to life” (Liu, 1995, p. 440-441).

- **Intelligibility:** Emphasizes the listener's ability to correctly recognize individual words in an utterance, rather than the ability of the listener to come to a global understanding of the general message (Derwing & Munro, 2015).
- **Learner autonomy:** The ability of learners to take control of their own learning (Holec, 1979).
- **Legitimate Peripheral Learning:** According to Lave and Wenger (1991), the term "provides a way to speak about the relations of newcomers to old-timers, and about activities, identities, and artifacts, and communities of knowledge and practice" (p. 29).
- **Mixed methods research design:** The central idea is that by combining quantitative and qualitative approaches to data collection and analysis, a more comprehensive understanding of the research problem can be achieved (Cresswell & Plano Clark, 2007).
- **Ontology:** A theory of existence that deals with the philosophical questions of "What is reality?" and "what does it mean to say an object exists?" Answers to these questions have implications for research because assumptions made about the nature of the object of study has implications for the methods used to study it (Riazi, 2016. p.219).
- **Positivism:** Any system that confines itself to the data of experience and excludes a priori or metaphysical speculations. A positivist paradigm (or world view) believes in an objective reality and unmediated access to and understanding of that reality (Riazi, 2016, p.104).
- **Pragmatism as a research philosophy:** Allows the researcher to approach the study using the method the researcher deemed most appropriate. Thus, the researcher is free to adopt the philosophical paradigm or blending of paradigms that best suits the research questions (Tashakkori & Teddlie, 1998).

- **Pronunciation:** All aspects of the oral production of language, including segments, prosody, voice quality, and rate (Derwing & Munro, 2015, p. 5).
- **Prosody:** Elements of speech that are properties of syllables and larger units of speech such as intonation, stress, and rhythm, sometimes referred to as suprasegmentals (Derwing & Munro, 2015).
- **Scaffold:** Scaffolding in teaching refers to a variety of techniques used to support student learning as they progress towards a greater understanding of the subject. These supportive strategies are usually temporary (Brunner, 1966; Shvarts & Bakker, 2019); “carefully and gradually removed with the goal of enabling the learner to eventually be independent and self-directing” (Curtis, 2017, p. 220). Scaffolded learning in this sense is distinguished from general teacher support for learning in that the goal or objective is explicitly targeted through specific activities and feedback.
- **Situated learning:** Learning by doing; learning in context (Lave & Wenger, 1991)
- **Speech comprehensibility:** According to Munro and Derwing (1995) comprehensibility refers to the “listeners’ perceptions of difficulty in understanding particular utterances” (p. 291).
- **Speech production:** Turning thought into speech through a) conceptualization; b) formulation; c) articulation; and d) self-monitoring (Kormos, 2006).
- **Speed of speech:** Speech rate or how fast the person speaks (number of syllables divided by the time, including silences) (Kormos & Denes, 2004; Derwing & Munro, 2015).
- **Volume:** The quantity or power of sound; the degree of loudness.
- **Zone of proximal development:** ‘the distance between the mental age, or the level of actual development, determined by means of independently solved problems and the

level which a child achieves when solving problems not individually but in collaboration'(Vygotsky1934: 218, translated by Artemeva in Artemeva & Fox, 2014).

In education it refers to the idea that teachers “should pitch what we teach so that it is slightly too hard for students to do on their own, but simple enough for them to do with assistance” (Wass & Golding, 2014, p. 671).

## CHAPTER ONE: INTRODUCTION

### 1.1 Overview and research questions

Recent research (Millard & Hirano, 2020) suggests that although both teachers and learners recognize the importance of pronunciation instruction, it is still a neglected skill in many classrooms. This may, in turn, contribute to students' hesitancy to participate in academic contexts that depend on oral production such as interaction in the classroom or giving academic presentations (Tejeda & Santos, 2014). In concordance with this, my previous teaching experience had led me to the recognition that students were graduating from my English for Academic Purposes (EAP) classes (and the EAP program at a medium-sized Canadian university) with an insufficient amount of support to develop their pronunciation, specifically their *speech comprehensibility*, defined by Derwing and Munro (2015) as “the ease or difficulty a listener experiences in understanding an utterance” (p. 5). Unfortunately, class time was not available to devote to this very important aspect of language learning, partly because, as with many EAP programs, classes were not homogeneous with regard to L1 or proficiency level within the skills. Therefore, each individual in the class had specific issues that needed attention. In addition, I felt that I did not have the teaching expertise in the area of pronunciation necessary to identify specific problems and develop an individually tailored exercise program for each student.

I, therefore, introduced an electronic portfolio (ePortfolio) learning module into my EAP course curriculum in 2014 to provide the affordances (Canole & Dyke, 2004; Hartwick, 2018) of an auxiliary online learning space for the improvement of this important skill. The main goal of the learning module was to fill the instructional gap between what I perceived learners needed and what was available to them in my course by scaffolding learners – i.e., using variety of techniques, that may change over time, to support student learning as they progress towards a

greater understanding of the subject (Brunner, 1966) – to diagnose their own problems and find ways to improve using readily available resources on the internet. Through guided cyclical actions of reflection, inquiry, and integration (Eynon & Gambino, 2018), learners engaged in more autonomous learning by examining their performance, planning interventions, reviewing performance, and assessing improvement (Reinders, 2011). The expectation was that those learners who fully engaged with the resources would improve speech comprehensibility and possibly develop a sense of learner autonomy which might carry on beyond the course, to other contexts of academic learning.

In the process of implementing the ePortfolio learning module, it seemed a simple request for students to reflect on their learning, but it soon became apparent that I had discovered what Dewey and other researchers had already reported: learners must be guided or scaffolded to engage in reflection (Argyris & Schön, 1974; Benson, 2006. Dewey, 1910, 1938; Hamilton, 2013). In other words, developing learner autonomy is a joint undertaking, requiring participation from both learner and teacher (Dam, 2003). Learners may jump to conclusions without observing and interpreting (Dewey, 1938). For example, many of my students voiced the opinion that they would automatically improve their pronunciation if they watched English language movies. They had to be guided to investigate beliefs such as this and to open their minds to new interpretations of the facts. I began to explore the interplay between improvement in a particular skill – in this case, speech comprehensibility – reflection, autonomous learning, and the ePortfolio. Thus, after implementing the ePortfolio learning module in my EAP courses over several terms, I wanted to investigate to what extent, if any, my goals for my students were being achieved. Following are the two research questions that guided this investigation. Each research question consists of two parts, Part A and Part B.

**RQ1:**

**Part A: Did the use of an ePortfolio learning module implemented in a university EAP course foster the improvement of L2 learners' speech comprehensibility?**

**Part B: If yes, how and why? If not, why not?**

**RQ2:**

**Part A: Did the use of an ePortfolio learning module implemented in a university EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility?**

**Part B: If yes, how and why? If not, why not?**

The next section explores the importance of *speech comprehensibility* for the L2 learner and the lack of attention to this aspect of oral speech in tertiary level EAP courses.

## **1.2 Background to the study**

Research shows that international students' academic performance and acculturation (Cheng & Fox, 2008) are negatively affected by lack of proficiency in second language speech production (cf. Boonkit, 2010; Fakeye, & Ogunsiji, 2009; Maleki & Zangani, 2007; Nematizadeh & Wood, 2019; Tang, Zhang, Li, & Zhao, 2013; Wood, 2010, 2016; Yeh & Inose, 2003). According to Orbeta and San Jose (2013) fear of making mistakes during speaking tasks contributes to anxiety and apprehension that have an "effect on oral performance in pronunciation ... fluency, and vocabulary" (p. 155), not to mention the frustration L2 speakers feel when they are not understood (Derwing & Munro, 2015). According to Boonkit (2010), "confidence and competence usually lead to strengths of English speaking skills" and teachers should make it a priority to help learners "feel comfortable with their language use" (p. 1306). Because of the importance of speech production, researchers have suggested that course design should include types of tasks, materials, and speaking assessments that promote effective L2 speech production (cf. Baily, 2005; Goh, 2007; Wood, 2010, 2015). However, according to some researchers and

teachers, many tertiary level EAP courses do not provide the amount of time or the types of tasks that successfully address their international learners' speaking issues (e.g., Celce-Murcia, Brinton, & Goodwin, 2010; Derwing, 2010; Holland & Fisher, 2008). Wood (2010) suggests that "many L2 learners grapple with the effects of inadequate fluency long after completing basic L2 study" (p. 1). Following are some suggested reasons for this apparent gap in instruction.

Despite the importance of developing L2 academic speech production, there is limited focus on this aspect of language development in the tertiary level EAP language classroom (Derwing, 2010; Thomson, 2018; Wood, 2010) because classes are large, time is short, and the curriculum is already overburdened. The curriculum in tertiary level EAP courses is often crowded with activities to help L2 university or university-bound students cope with the extensive academic reading and writing tasks they will have to deal with in their programs, which, although essential, according to Thornbury (2005), may not efficiently support speech production. Thornbury (2005) suggests that this is because speaking requires a different set of subskills such as the ability to cooperate in the management of the speaking event and, as it takes place in real time, there is a need for efficient online planning. This lack of focus on speech production in EAP courses may result in L2 learners enrolled in English medium university academic programs feeling anxious about their speaking performance, and it may inhibit their engagement in the classroom activities that require oral communication (Kessler, 2010; Kubo, 2009). This may mean that L2 learners avoid interaction with English speaking peers and engage only with students who speak their first language – undermining to a degree their experience of studying abroad (Cheng & Fox, 2008). As a result, some L2 learners may not develop the whole range of academic skills necessary for their success in university level programs and may be at a disadvantage when compared to their English speaking classmates.

A second important issue is that teachers may not feel knowledgeable in teaching speaking, including pronunciation, and feel they should improve their classroom skills in this area (Foote, Holtby & Derwing, 2011; Celce-Murcia, Brinton, & Goodwin, 2010; Millard & Hirano, 2020; Willey, 2020). However, as Thornbury (2005) notes, there is a serious lack of “available guides for teaching speaking-as-skill” (p. iv), as it has been a “largely neglected concern under the communicative approach” (Derwing & Munro, 2015, p. xi), currently the dominant method of language teaching (Celce-Murcia, Brinton, & Goodwin, 2010).

One specific problem for language teachers may be untangling the meaning of the various terms related to speech production. According to Kormos, (2006), the term *speech production* refers to the act of turning thought into speech and consists of four phases: a) *conceptualization* - planning; b) *formulation* - encoding; c) *articulation* – production of speech sounds; and d) *self-monitoring* – checking correctness. Language teachers focus on each of these areas to varying degrees, however, *articulation* is the most under researched, and the least understood by many language teachers (Kormos, 2006; Munro & Derwing, 1995a). In this dissertation research, Kormos’s term, *articulation*, is replaced by Munro and Derwing’s (2015) similar, although perhaps not synonymous term, *pronunciation*. Specifically, following Derwing and Munro (2015), in this research, *pronunciation* is defined as “the ways in which speakers use their articulatory apparatus to create speech” (p.2). It consists of “all aspects of the oral production of language, including segments, prosody, voice quality, and rate” (p. 5). This definition seems to incorporate *fluency*, an often vaguely defined term sometimes used to refer to “naturalness of flow of speech, or speed of oral performance” (Wood, 2010, p. 9), or “the degree to which speech flows easily without pauses and other dysfluency markers” (Derwing & Munro, 2015, p.5). Munro and Derwing (1995) suggest that L2 pronunciation consists of three overlapping

dimensions, *accentedness*, *intelligibility*, and *comprehensibility* (discussed in more detail in section 2.2.1.1.2 The pronunciation constructs p.36). Pronunciation obviously contributes to successful oral communication and without proficiency in this area, the L2 learner may be isolated from the second language community (Boonkit, 2010; Derwing & Munro, 2017; Orbeta & San Jose, 2013; Tang, Zhang, Li, & Zhao, 2013).

As mentioned, in order to address the gap between instruction needed and time available, a learning module was implemented in an advanced EAP tertiary level course. The learning module had the expected outcome of scaffolding and encouraging L2 learners to take on more responsibility for improving their pronunciation, i.e., to set goals, find resources, and assess progress (Reinders, 2011). This learning module, housed in an electronic portfolio (ePortfolio), was integrated into advanced level EAP courses over a period of five years. Its purpose was to provide instructional space for the improvement of pronunciation, specifically *speech comprehensibility*, by fostering autonomous learning so as not to encroach on time needed for existing course objectives and goals.

In short, the purpose of this dissertation research was to assess the impact of this ePortfolio learning module on L2 learners' speech comprehensibility and autonomous learning. A more detailed discussion of the purpose of the study follows in the next section.

### **1.3 Purpose of the study**

Considering the potential consequences of limited opportunities for developing L2 pronunciation in language programs at the university level (Derwing, 2010; Thomson, 2018; Wood, 2010), the purpose of this study was to investigate of the impact of an electronic portfolio (ePortfolio) learning module designed to develop *speech comprehensibility* and *autonomous learning*. As mentioned, Derwing and Munro (2015) identify *speech comprehensibility* as one aspect of the

pronunciation construct (which also includes *accentedness* and *intelligibility*, explored in section 2.2.1.1) and define it as “the ease or difficulty a listener experiences in understanding an utterance” (p. 5). According to Holec (1979), *autonomous learning* is based in the ability of learners to control their own learning (explored in section 2.2.2.1).

The ePortfolio learning module was incorporated into an advanced level EAP course at a medium sized Canadian university. This EAP course was part of an English language program designed to facilitate integration of L2 learners into the academic life of the university by supporting their L2 development while allowing limited engagement with their program coursework. In this program, based on results of an English proficiency test (e.g., Test of English as a Foreign Language (TOEFL), International English Language Testing System (IELTS) or the Canadian Academic English Language Assessment (CAEL Assessment)) L2 learners are placed in one of three levels of the program. They are provided with academic English language instruction for which they may receive a university credit, and at the same time may take a limited number of courses in their academic programs.

The learning module used electronic portfolio technology as a platform or tool for pronunciation practice while fostering autonomous learning. In other words, the learning module provided materials (electronic portfolio to house videos, transcripts, and reflections, and guidance to appropriate resources on the internet) for the development of speech comprehensibility, with the expectation of a concomitant benefit of developing autonomous learning skills (such as critical self-reflection) for use both during engagement with the learning module, and in other areas of academic learning beyond the end of the EAP course. Thus, an objective of the ePortfolio was to help scaffold (Bruner, 1975) L2 learners’ efforts at moving from dependence on the teacher to relying more on their own ability to address learning issues

within the context of improving their speech comprehensibility. The purpose of this research was to assess the impact of the ePortfolio learning module within this framework. The next section explores the importance of the study to various stakeholders, including ESL/EAP program administrators and language teachers.

#### **1.4 Significance of the study**

The findings of this research provide key stakeholders (e.g., Program designers, curriculum developers, language teachers, and L2 learners) with rich information about the interplay of relationships between the ePortfolio as a technological platform, the improvement of L2 learners' speech comprehensibility, and how autonomous learning can be promoted in such a context. The empirical evidence may help to deepen our understanding of the process of developing autonomous learning in the language classroom. The findings also provide practical examples of how EAP teachers can integrate much needed practice in speech comprehensibility into a curriculum that tends to emphasize academic reading and writing, helping L2 learners develop confidence in their ability to become successful language communicators in academic contexts.

#### **1.5 Organization of the dissertation**

This dissertation consists of six chapters. Following this first introductory chapter, Chapter Two reviews related research literature that informed the current study and framed the research questions. It clarifies the concepts of *speech comprehensibility* and *autonomy in language learning*, providing the definition of these terms as they were used in this study and describes the ePortfolio learning module. It then provides an overview of relevant empirical literature on oral production and mediating tools that support autonomous learning, followed by an overview of theoretical literature related to autonomy and reflection. Finally, it discusses theoretical models

of relevance to this dissertation research, followed by a discussion of the specific theoretical framework that informed this investigation.

Chapter Three presents the research methodology used to address the research questions, the research philosophy, and the overall research design. In order to address the research questions a case study research approach was used with a mixed methods research design. It includes a detailed description of the participants, instruments and procedures for data collection, analysis, and methods for ensuring research trustworthiness and meaningfulness.

Chapter Four reports the results of the analysis and presents a discussion of the findings. It focuses on each research question, first presenting the results and discussion of the quantitative analysis and then the results and discussion of the qualitative analysis.

Chapter Five merges the findings from the quantitative and qualitative phases of the study to present a discussion of what it all means.

Chapter Six concludes the research by discussing the implications of the research in the field of language teaching. It also addresses the research limitations and provides suggestions for future studies.

### **1.6 In a nutshell**

The purpose of this chapter was to present a general description of the ePortfolio learning module, as well as the research objectives, and the significance of the study. The chapter also explained the organization of the dissertation. Each of the following chapters contains a table that summarizes the contents of the chapter, aiding the reader in navigating the topics discussed in the chapter. The next chapter provides a review of literature relevant to speech comprehensibility, ePortfolios in language learning, and learner autonomy and reflection.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Overview**

Having introduced the study in Chapter One, this chapter provides an overview of literature related to the three aspects of the study: speech comprehensibility, electronic portfolios in language learning, and autonomous learning. The chapter begins by exploring empirical research related to oral language production, focusing on pronunciation and speech comprehensibility. It also considers the mediating tools and technology that support reflection and autonomous learning by exploring the role of portfolios in language learning, focusing on the affordances of an electronic learning space such as ePortfolios and the use of Automatic Speech Recording (ASR). Then it reviews theoretical research investigating the nature of autonomy in language learning, particularly reflection. The final two sections bring the threads together by describing theoretical models of relevance to this research followed by a discussion of the specific theoretical framework that informed this study.

In order to aid the reader in navigating the information, Table 2.1 summarizes the contents of the chapter.

**Table 2.1***Summary of Chapter Two: Literature Review*

| <b>Section</b>   | <b>Content</b>   |
|--|--|
| <b>2.1 Introduction</b>  | <b>2.1.1 Description of the ePortfolio learning module</b><br><b>2.1.2 Definition of relevant terms</b><br><b>2.1.3 Research questions guiding this study</b>  |
| <b>2.2 Background literature relevant to this dissertation</b> | <b>2.2.1 Summary of empirical research</b> <ul style="list-style-type: none"> <li>2.2.1.1 Oral production <ul style="list-style-type: none"> <li>2.2.1.1.1 The importance of oral production to L2 learners in an academic context</li> <li>2.2.1.1.2 The pronunciation constructs: accentedness, intelligibility, and comprehensibility</li> <li>2.2.1.1.3 Speech comprehensibility</li> <li>2.2.1.1.4 Features that contribute to comprehensibility ratings</li> <li>2.2.1.1.5 Teaching pronunciation</li> </ul> </li> <li>2.2.1.2 Mediating tools and technology that support reflection and autonomous learning <ul style="list-style-type: none"> <li>2.2.1.2.1 An overview of portfolios in language learning</li> <li>2.2.1.2.2 Electronic portfolios</li> <li>2.2.1.2.3 Automatic Speech Recording (ASR)</li> <li>2.2.1.2.4 Description of the ePortfolio learning module under study</li> </ul> </li> </ul>   |
|  | <b>2.2.2 Summary of theoretical research</b> <ul style="list-style-type: none"> <li>2.2.2.1 Autonomy and language learning <ul style="list-style-type: none"> <li>2.2.2.1.1 The importance of autonomy in language learning</li> <li>2.2.2.1.2 Becoming an autonomous learner</li> <li>2.2.2.1.3 Modelling autonomous learning</li> <li>2.2.2.1.4 Operationalizing autonomous learning</li> </ul> </li> <li>2.2.2.2 Reflection: the heart of autonomy <ul style="list-style-type: none"> <li>2.2.2.2.1 The concept of reflection: an introduction</li> <li>2.2.2.2.2 An innovative break with tradition: Dewey</li> <li>2.2.2.2.3 Reinvigoration of the role of reflection in learning: Schön, Argyris, and Valli</li> <li>2.2.2.2.4 Reflection goes mainstream: Boud and Walker</li> <li>2.2.2.2.5 Reflection is politicized: Freire and Habermas</li> <li>2.2.2.2.6 Reflection in the 21<sup>st</sup> Century: autonomy – uses and abuses</li> </ul> </li> </ul> |
| <b>2.3 Theoretical frameworks informing this study</b>         | <b>2.3.1 Tynjälä’s model of integrative pedagogy</b><br><b>2.3.2 Eynon and Gambino’s pedagogy of the ePortfolio</b><br><b>2.3.3 Integrative and ePortfolio pedagogy inform the ePortfolio learning module</b>  |
| <b>2.4 Bringing the threads together</b>                       | <b>The theoretical framework informing this study</b>  |
| <b>2.8 In a nutshell</b>                                       | <b>Chapter summary</b>   |

Before moving into a review of the literature however, it may be useful to define the relevant terms used in the study, describe the ePortfolio learning module, and to present the research questions in more detail.

### 2.1.1 Definition of relevant terms

Although the terms *speech comprehensibility*, *ePortfolios*, and *autonomy* are explored in more detail in later sections, and the glossary at the beginning of the dissertation gives a brief summary of each of these terms for quick reference, this section will present an explanation of each term as it is used in this study.

*Speech Comprehensibility*: According to Derwing and Munro (2015), *speech comprehensibility* is one of three overlapping dimensions of pronunciation, the other two being *accentedness* and *intelligibility*. The term, *pronunciation*, sometimes referred to as *speech production*, is used in this study to mean “the ways in which speakers use their articulatory apparatus to create speech” as defined by Derwing and Munro (2015, p. 2). They state that “the concept encompasses all the individual speech sounds in a particular language as well as the prosodic and voice quality features that are shared by speakers of that language” (p. 3). This definition includes segmentals, which refer to the consonants and vowels of a particular language as well as suprasegmentals (or prosody) of a language, which refer to word and sentence stress, rhythm, intonation, juncture, and tone.

As mentioned, Munro and Derwing (1995) analyzed the construct of L2 *pronunciation* as consisting of three overlapping dimensions – *accentedness*, *comprehensibility*, and *intelligibility*, stating that these dimensions are not simply part of the speech sound itself, but also reside in the listener’s response to the utterance. According to Derwing and Munro (2015), *accentedness* refers to a speech pattern that differentiates members of particular speech communities, and *intelligibility* is the degree of agreement between what the speaker intended to say and what the

listener understood. Regarding the definition of *comprehensibility* as it is used in this study, Munro and Derwing (1995) define it as the “listeners’ perceptions of difficulty in understanding particular utterances” (p. 291). It relates to the effort needed to process the sounds made by the speaker and is not limited to L2 speakers. Comprehensibility can be affected by mumbling, speaking too quietly or too quickly as well as variations in the language’s phonology, prosody, and speech patterns (Derwing & Munro, 2015). Thus, the perception of *comprehensibility* resides in the listener and therefore can be rated by a trained observer.

*ePortfolio*: The term *ePortfolio* is used to designate a portfolio that is web-based. According to Eynon and Gambino (2017), an ePortfolio is defined as “web-based student-generated collections of learning artifacts (papers, multimedia projects, speeches, images, etc.) and related reflections, focused on learning and growth” (p.1). Within this study, the ePortfolio refers to the artefacts (e.g., audio recordings, written reflections, assignments, test scores) collected over a 12-week EAP advanced level course and housed in a technological platform available through the university. The benefit of an ePortfolio is that multimedia resources can be easily stored and repeatedly accessed. This is especially important for developing speech comprehensibility as it enables the learner to maintain an audio and video record of progress over time which can be easily accessed many months after the course is finished. (See Section 2.1.2 for a detailed description of the ePortfolio learning module.)

*Autonomy*: According to the Merriam-Webster dictionary, the term ‘autonomy’ is derived from the ancient Greek *auto*, meaning ‘self’ and *nomos*, meaning ‘law’, thus a system of laws made by oneself. This simple definition belies the difficulty in finding an adequate definition that encompasses all the meanings that have been attached to it since a resurgence of interest in the concept in the 1970s (Benson, 2009). This is because researchers have found it necessary to

define exactly what it means to be autonomous in many different contexts. For example, Candy (1991), in his book, *Self-Direction for Lifelong Learning: A Comprehensive Guide to Theory and Practice* lists 100 different skills and capabilities which he suggests educational researchers have related to autonomy, and Benson (2009) states that the term is difficult to define because it takes different forms for different or even the same learner depending on the context.

When Holec (1979) embarked on his report for the *Council of Europe Modern Language Project*, his first task was to define the term, *autonomy*, as it related to the language learner. In this context, he defined it as “the ability to take charge of one’s own learning” (Holec, 1979, p. 3), and it is this definition that is used in this study. Holec stated that it describes an ability or a “potential capacity to act in a given situation.” In other words, autonomous learners are capable of making decisions concerning their learning, such as determining objectives, selecting methods and techniques to be used, and monitoring progress. As such, Holec underscored the idea that it was an ability that “is not inborn but must be acquired either by ‘natural’ means or (as most often happens) by formal learning, i.e., in a systematic, deliberate way” (Holec, 1979, p. 3), and learners may not be equally autonomous in every context. In relation to this definition, then, learners should be guided or supported and may be assessed as they take on the responsibility for the decisions regarding various aspects of their learning in each context.

The following section describes the ePortfolio learning module in more detail.

### **2.1.2 Description of the ePortfolio learning module**

The study that is the focus of this dissertation investigated the impact of a 12-week learning module that was administered in an English for Academic Purposes (EAP) course in a medium sized Canadian university. The course was the advanced level of a three level EAP program of study for which students could receive credit. In addition, while they were enrolled in the EAP

program, they were eligible to take a limited number of courses in their academic program of choice. As mentioned previously, there was a perceived need for instruction in speech comprehensibility, however there was little time to spare for this instruction in the curriculum. Thus, the purpose of the module was to scaffold – or offer targeted support to – L2 learners as they became more autonomous in achieving their goals of improving their speech comprehensibility – i.e., to facilitate the shift from teacher dependent learning to learning guided by learner reflection and control (Bruner, 1975; Shvarti & Bakker, 2019).

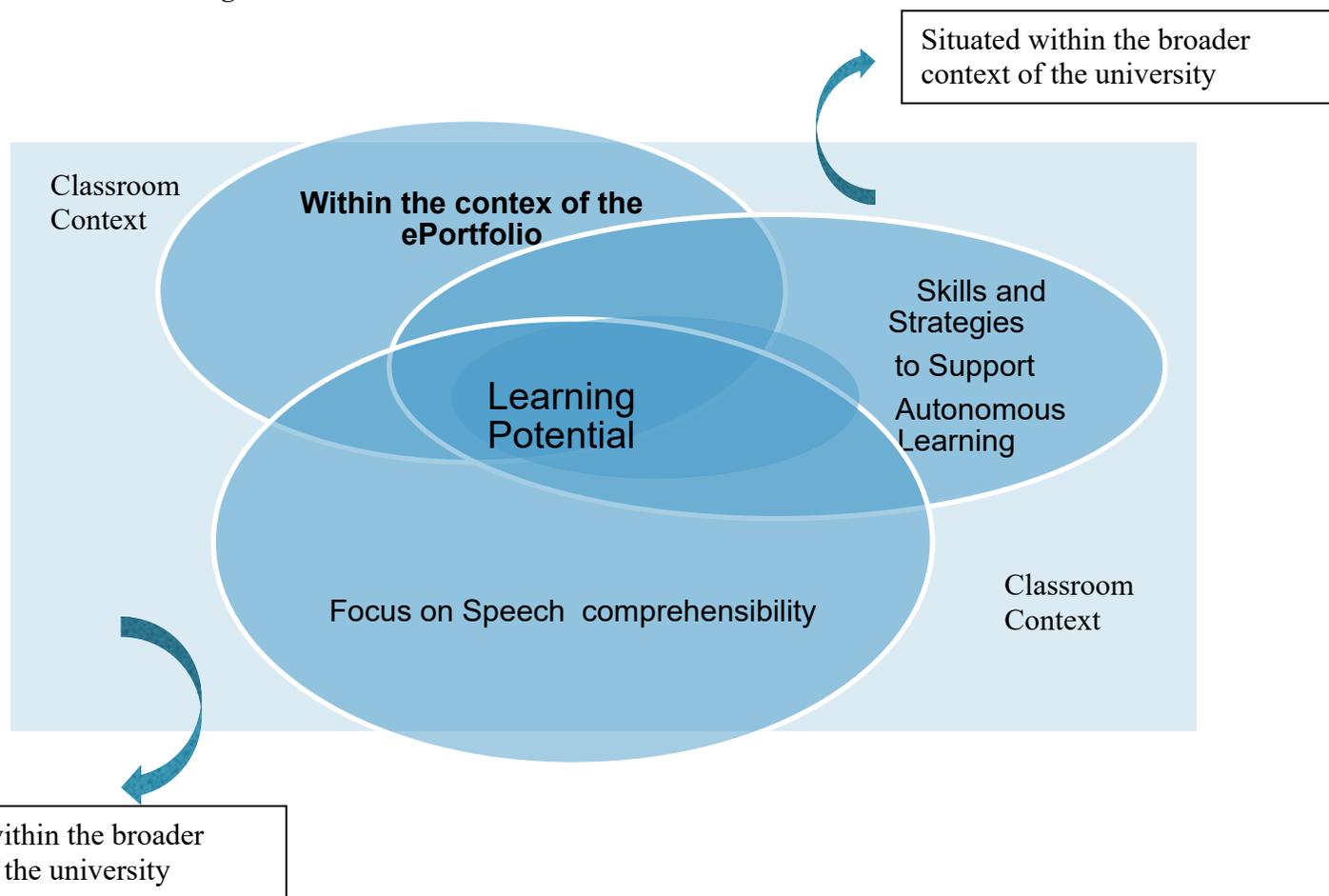
The ePortfolio learning module, which was dedicated to the improvement of speech comprehensibility, consisted of four electronic portfolio (ePortfolio) submissions over the 12 week term. For each submission, participants were instructed to record a video while they spoke about a specific topic and to run an automatic speech recording (ASR) software at the same time. The ASR responded to pronunciation anomalies by supplying words that did not reflect what the participants thought they had said. Participants were instructed to listen to their video while reading the transcripts and to underline the inaccuracies in the transcript. Then they were asked to write a reflection focused on what pronunciation problems they believed caused the inaccuracies. With these inaccuracies in mind, they were directed to a list of internet resources selected by the teacher, which addressed a variety of issues, including specific sound production, intonation, rhythm, linking, and stress. They were asked to choose among the resources, explaining in their reflection how they hoped the resource would help to remedy the problem they had identified. They were also asked to set one or two goals for the next submission. In the subsequent submission, part of their reflection consisted of reviewing their previous performance, including their goals, and assessing whether they had achieved those goals. After each submission, they received feedback from the teacher on how well their reflection addressed

the requirements of the submission. At the end of the module, they and the teacher reflected on their progress in speech comprehensibility over time. The grade for the learning module was based on the depth of their reflections.

This study investigated how activities designed to foster improvement in speech comprehensibility and the development of learner autonomy converged and interacted within the context of the ePortfolio. Figure 2.1 presents a graphic representation of the ePortfolio learning module.

**Figure 2.1**

*The EAP Learning Module*



In Figure 2.1, the ePortfolio learning module is represented by three bubbles which are situated within the context of the classroom, and more broadly, within the context of the university. The three bubbles represent the three aspects of the learning module. The two bubbles in the foreground represent the areas of interest, speech comprehensibility and autonomous learning. These two bubbles overlap because the areas of interest are integrated but separate. They are integrated because the skills and strategies have a two-fold goal – to foster autonomous learning and to support learners’ exploration of speech comprehensibility. They are separate because learners are clearly aware that their goal is to improve speech comprehensibility; however, they may not be so clearly aware that the activities also help them develop techniques that enhance autonomous learning. It is in this area of overlapping that the learning potential is the greatest. The background bubble represents the ePortfolio which is the software platform that houses and displays the activities and learners’ work, making the learning module possible.

### **2.1.3 Revisiting the research questions**

This section revisits the research question, explaining how each one guided the selection of literature that forms the literature review for this dissertation. Although it appears that the process of writing the dissertation was linear – beginning with the questions, reviewing the literature, collecting and analyzing data – I found that actually doing the research was much more cyclical. I was constantly coming upon issues that needed more study and thus rearranging the literature review to include this new information. I returned to the research questions often, using them as a guide to make choices as I expanded on the selection of relevant literature used to inform the study, as well as the method or methods use to investigate the issue under study.

In order to organize the presentation of the relevant literature, I created two categories:

Section 2.2.1 A summary of empirical research, which includes discussions of oral production

and portfolios in language learning; and Section 2.2.2 A summary of theoretical research, which investigates autonomous learning.

Given the overall purpose of the study, the first research question focused on the L2 learners' speech comprehensibility and was simply designed to measure any improvement in this skill within the context of the ePortfolio learning module.

**RQ1:**

**Part A: Did the use of an ePortfolio learning module implemented in a university EAP course foster the improvement of L2 learners' speech comprehensibility?**

**Part B: If yes, how and why? If not, why not?**

In order to address these research questions, speech comprehensibility and how it can be measured were explored. This exploration involved mainly a survey of literature related to empirical research into speech production, focusing on comprehensibility. It examined how this skill may be defined and various methods used to measure it (see section 2.2.1.1).

As both the investigation of speech comprehensibility and autonomous learning were positioned within the context of an ePortfolio learning module, a section was devoted to the mediating tools and technology of portfolios in language learning, ePortfolios, and speech-to-text transcription. As this involved mainly empirical research, I positioned this section after the exploration of speech comprehensibility (see section 2.2.1.2)

The second research question focused on autonomous learning within the context of the ePortfolio.

**RQ2:**

**Part A: Did the use of an ePortfolio learning module implemented in a university EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility?**

**Part B: If yes, how and why? If not, why not?**

To address these research questions, literature pertaining to theoretical issues related to autonomous learning were explored, including a section devoted to reflection. This section investigated definitions of autonomy and how and why autonomous learning may be fostered and the role of reflection in learning.

Finally, section 2.2.3 explores the theoretical frameworks I found most relevant to the study including a section that draws this information together into a theoretical framework that captured, for me, the essence of what I was attempting to accomplish with my students by introducing the ePortfolio learning module in the classroom (see section 2.2.3.4). (Please refer to Table 2.1 *A summary of Chapter Two: Literature Review*, for clarification)

## **2.2 Background literature relevant to this dissertation**

### **2.2.1 A summary of empirical research informing this study**

#### **2.2.1.1 Oral production**

##### ***2.2.1.1.1 The importance of oral language production to the L2 learner in academic contexts***

Over the past decades the number of international students studying in English medium universities and colleges has risen dramatically. For example, according to Canadian Immigration and Citizenship in 2019 there were over 400,000 international students at all levels of study, representing a 50% increase over 2015 (<https://www.cicnews.com/2020>). For these students, effective oral communication is necessary to adjust and thrive in an L2 context (Cheng & Fox, 2008); however, fear of making errors, not speaking smoothly, and/or not being understood due to pronunciation issues cause anxiety (Derwing & Munro, 2015), which in turn affects academic performance (Orbeta, 2013; Wood, 2016; Woodrow, 2006). Many researchers (e.g., Boonkit, 2010; Cheng & Fox, 2008; Mori, 2000; Yeh & Inose, 2003) have suggested that for an international student in a new academic context, lack of effective oral language skills is

one of the most important factors that affect academic performance and acculturation. According to Kessler (2010) “[s]peaking in a foreign language may result in the most heightened form of affect that a student can experience” (p. 362). Poor academic performance and a feeling of alienation create negative effects on psychological adjustment to the new situation (Boonkit, 2010; Lin & Yi, 1997; Mori, 2000). Yeh and Inose (2003) also indicate that there is a significant inverse relationship between levels of effective oral communication and levels of acculturative stress among international students, which affects academic performance. According to Yeh and Inose (2003),

... international students with higher self-reported levels of English language fluency may be less embarrassed and less self-conscious about their accent or ethnic background (Barratt & Huba, 1994). They may be able to interact more confidently in their daily lives (asking for help, ordering food, meeting new people, etc.). Finally, we believe that higher levels of English language fluency would help international students perform at a higher level in some academic classes since they may feel more comfortable speaking in class and participating in discussions (p. 23).

Even though research indicates that effective oral production skills are important factors for the academic and social success of international students, many second language classes do not specifically address these issues (Thornbury, 2005; Wood, 2010). Although teachers may attempt to develop accuracy at both the written and spoken level, issues of speech comprehensibility at the level of pronunciation and fluency are largely unaddressed and L2 learners continue to deal with the consequences of poor speech production skills throughout their academic experience (Wood, 2010). Ketabi (2015) states that teaching pronunciation, a main factor in comprehensibility, has been largely “marginalized and neglected” (p.1). According to some researchers (e.g., Derwing, 2010; Hinkel, 2006; Ketabi, 2015; Moghaddam, et al., 2012), for the past 40 years, the teaching of pronunciation has been considered a relatively unimportant aspect

of English language teaching at the tertiary level. Thornbury (2005) suggests that there is a lack of available materials and support for teachers who are interested in teaching pronunciation and fluency. According to Derwing (2010), “L2 teachers are somewhat intimidated by the idea of teaching pronunciation” (p. 24), even though it is key to comprehensible speech and a necessary aspect of effective communication skills. One reason for the discomfort some L2 teachers feel about teaching pronunciation is that, among language skills, it may be the least understood (Thomson, 2018), as “efforts to define what constitutes good or even adequate pronunciation were historically limited” (p. 11). The next section will explore how pronunciation is defined with regard to this study.

#### **2.2.1.1.2 The pronunciation constructs: accentedness, intelligibility, and comprehensibility**

In the early 1960s, Lado (1961) commented in his book, *Language Testing: The Construction and Use of Foreign Language Tests* that “[t]he ability to speak a foreign language is without doubt the most highly prized language skill, and rightly so... Yet testing the ability to speak a foreign language is perhaps the least developed and the least practiced in the language testing field,” arguing that this was because of “a clear lack of understanding of what constitutes speaking ability or oral production” (p. 239). In this book, he spent a great deal of time explaining how to assess both segmental and suprasegmental features of English, however, some researchers suggest that because his definitions were impacted by the relatively new field of theoretical linguistics, most language teachers would not have found his explanations useful (Thomson, 2018). Moving forward, thirty years, Munro and Derwing (1995) published their seminal article *Foreign Accent, Comprehensibility, and Intelligibility in the Speech of Second Language Learners*, in which they suggested a tripartite approach to L2 speech analysis, consisting of the separate, but overlapping dimensions of pronunciation, *foreign accent* or

*accentedness, comprehensibility, and intelligibility*. They suggested that considering pronunciation in this way was more useful to the classroom teacher because these dimensions could be defined and measured (Munro & Derwing, 1995). Although there is still much discussion on the nature and importance of the partially independent but overlapping dimensions that make up pronunciation or how these dimensions should be operationalized (Munro, 2018), there is some agreement that these three dimensions are the main measurable constructs of pronunciation, which together create a theoretical approach to defining oral production (Derwing & Munro, 2015; Kang & Ginther, 2018; Munro, Kang, Thomson, & Murphy, 2018; Kerlinger & Lee, 2000).

With regard to the present study, the focus is on *comprehensibility*; however, it is useful to summarize how Munro and Derwing (1995a, b) defined and measured these three constructs. To begin, they indicated the phenomenon of pronunciation is a function of both the speech sounds and the perception of the listener. They defined *foreign accent or accentedness* as “non-pathological speech that differs in some noticeable respects from native speaker pronunciation norms” (Munro & Derwing, 1995b, p. 289) and they operationalize it as based in the perception of the listener. Using human raters, they evaluated foreign accent on a nine-point scale (from one = no accent to nine = extreme accent). Munro and Derwing (1995b) defined *intelligibility* as “the extent to which the speaker’s message is actually understood” (p. 291), basing it on Schiavetti’s (1992) previous definition, “the match between the intention of the speaker and the response of the listener to speech passed through the transmission system” (p.13). They stated that intelligibility emphasizes the listener’s ability to correctly recognize individual words in an utterance, thus arriving at an understanding of the content of the utterance. When assessing intelligibility in their study, Munro and Derwing asked listeners to transcribe what the speaker

said, and the score was based on how many of the transcribed words were correct. Finally, *comprehensibility* is defined as the “listeners’ perception of difficulty in understanding particular utterances” (Munro & Derwing, 1995b, p. 291) and was assessed using a nine-point scale similar to the one used to assess accentedness. Thus, they make it clear that *intelligibility* is operationalized as correctly recognizing or identifying the speaker’s message at the syllable or word level, whereas *comprehensibility* is operationalized as the listener’s estimate of how much effort is required to understand the message. Following Munro and Derwing (1995a, b, 2009), Suzuki and Kormos (2020), state that comprehensibility is “a holistic construct based on listeners’ perception, and as such is more strongly related to the amount of cognitive effort and time required by listeners to understand speech than the eventual level of understanding” (p. 144), clearly distinguishing it from *intelligibility*. Table 2.2 provides a brief overview of the three dimensions adapted from Munro and Derwing (1995a, b, 2009).

**Table 2.2**

*A tripart approach to L2 speech analysis: Three separate but overlapping dimensions of pronunciation (Adapted from Munro & Derwing 1995a, b, 2009)*

| Dimension                            | Definition   | Method of Assessment  |
|--------------------------------------|--|---|
| <b>Accentedness (foreign accent)</b> | Non-pathological speech that differs in some noticeable respects from native speaker pronunciation norms     | Nine point scale:<br>No accent to extreme accent            |
| <b>Intelligibility</b>               | The degree to which a speaker understands the listener’s intended meaning (actual comprehension)             | Dictation<br>Number of correct words                        |
| <b>Comprehensibility</b>             | A judgement on the part of the listener of the effort required to understand the speaker (processing effort) | Nine point scale:<br>Incomprehensible to easy to comprehend |

As mentioned, although these three constructs overlap, the focus of this study is comprehensibility. There is some agreement among researchers that comprehensibility is the

most important of the three overlapping constructs (Derwing & Munro, 2009, 2015; Suzuki & Kormos, 2020) and that it is possible to significantly improve L2 comprehensibility in all learners, even those who begin their language study later in life (Saito, Trofimovich, & Isaacs, 2016; Suzuki & Kormos, 2020). In addition, the importance comprehensibility plays in communication has been acknowledged by various high-stakes English proficiency tests such as the Canadian Academic English Language (CAEL) Assessment, the International English Language Testing Systems (IELTS) and the Test of English as a Foreign Language Internet-based test (TOEFL iBT) which include the term *comprehensibility* in their oral language descriptors.

As noted above, this study was motivated by the perceived needs of students enrolled in the tertiary level EAP program at a Canadian university for more guidance and practice in the area of *comprehensibility*. These students often found themselves in multilingual environments where many of their classmates and/or their professors or teaching assistants spoke English as an additional language. Some of these students may go on to assume the roles of teacher, teaching assistant, or other supportive positions. In fact, many English-medium universities are increasingly becoming multilingual environments where individuals who speak diverse languages communicate with each other mainly in English (Leung & Valdés, 2019). Thus, it is important that these students, and, in fact, all those involved in academic communication, have a clear understanding of their own comprehensibility when speaking (or how much effort is required by the listener to decipher their meaning, see above Munro & Derwing 1995b), regardless of the language they are using. The next section will explore comprehensibility in more depth.

### *2.2.1.1.3 Speech comprehensibility*

Munro and Derwing's (1995a) definition of speech comprehensibility as the effort required by the listener to understand the meaning of the utterance has been surprisingly constant, with minor differences residing in the wording of the descriptors connected to the points on the scale used. For example, a 2008 study by Kennedy and Trofimovich defined the term as "listeners' perceptions of how easily they understand an utterance" (p. 461) and they used a rating scale from one = very easy to understand to nine = very hard to understand. Julkowska and Cebrian (2015) state that "[c]omprehensibility is concerned with listeners' impressionistic observation of how easy it is to understand the L2 speech utterance" (p. 212) and used a scale from one = easy to understand to nine = impossible to understand. Derwing, Munro and Thomson (2008) presented a slightly modified definition – "the ease or difficulty with which a listener understands L2 accented speech" (p. 716). Several researchers referenced this definition in their studies (e.g., Isaacs & Thomson, 2013; O'Brian, 2014; Saito, Trofimovich & Isaacs, 2012).

In addition, recent research has shown that neither the size of the scale used to capture the different levels of comprehensibility, nor the tasks used to elicit speech has a great effect on results obtained. Munro (2017) investigated the use of different scales, finding that although some scales differed in the wording of the descriptors, or reversed the order (i.e., one = difficult to understand; nine = easy to understand), the raters were able to arrive at the same assessment of a learner's speech, regardless of the scale used. Munro (2017) also compared tasks and found that raters arrived at the same assessment of a learner's comprehensibility regardless of the type of task used to elicit speech. In accordance with these researchers, this study assessed participants' speech by asking raters to answer the question "Are you able to understand the meaning of the spoken text with relative ease?" Their perception was rated on an eleven-point

rating scale, with zero = incomprehensible and ten = No problem. (See Appendix A for rating scale). The following section explores literature regarding features that may contribute to comprehensibility ratings.

#### ***2.2.1.1.4 Features that contribute to comprehensibility ratings***

According to Thomson (2018), there is little available research on the factors that contribute to comprehensibility ratings, however this body of research is growing (Suzuki & Kormos, 2020). Some researchers (see, Munro & Derwing, 1995a; Trofimovich & Isaacs, 2012; Zielinski, 2008) found that while minor phonetic divergences mainly affected accent ratings, gross phonetic divergences, which may have an effect at the level of the phoneme, specifically affected comprehensibility. Isaacs and Trofimovich (2012) conducted an in-depth study of what raters attend to when assessing for comprehensibility. Using 19 quantitative speech measures (e.g., segmental, suprasegmental, fluency, lexical, grammatical, and discourse-level variables), they first analyzed 40 samples of native French learners of English which were then correlated with native English speakers' judgements. They then asked three ESL teachers to provide introspective reports on the linguistic features they most attended to when providing their judgements. They found five speech measures that clearly distinguished between L2 learners at different comprehensibility levels: lexical richness and fluency measures differentiated between low-level learners; grammatical and discourse-level measures differentiated between high-level learners; and word stress errors discriminated between learners of all levels.

In relating Isaacs and Trofimovich's (2012) findings to this present study, it is important to consider the task used to elicit speech as task type could affect the linguistic measures available for consideration (Crowther, Trofimovich, Isaacs, & Saito, 2017). In the present study, participants were required to read aloud an academic text taken from a first-year university

textbook (see Appendix B for sample texts). As a result, lexical richness, grammar, and discourse measures did not apply. However, measures of articulation of vowels and consonants, utterance fluency, i.e., observable temporal features of speech, (Segalowitz, 2010) as well as word stress errors were applicable in this context. Thus, it is necessary to investigate in more detail the contribution of relevant fluency measures to rater judgement of comprehensibility.

Some researchers have explored the relationship between comprehensibility and fluency, confirming the complex interplay between the two constructs (Suzuki & Kormos, 2020). According to several studies, temporal features, such as rate of delivery, hesitation and pausing, are measures of fluency that correlate highly with listeners' perceptions of fluency (Freed, 1995; Lennon, 2000; Riggenbach, 1991, 2000; Towell, Hawkins, & Bazergui, 1996; Wennerstrom, 2001; Wood 2010) and that dysfluency in these temporal features might interfere with listener comprehensibility (Derwing et al., 2004; Lennon, 2000, Suzuki & Kormos, 2020; Suzuki, Kormos & Uchihara, 2021). Suzuki and Kormos (2020) in an attempt to separate the two constructs found that rate of delivery was the best predictor of comprehension, and hesitation or pausing was more strongly correlated with perceived fluency, i.e., listener's inferences of cognitive fluency from utterance fluency features (Segalowitz, 2010). Based on the preceding discussion, it may be assumed that temporal aspects of speech fluency are an integral part of listeners' perception of comprehensibility.

Several researchers have investigated raters' judgements of fluency (Bosker, et al, 2013; Bosker, Quene, Saunders & de Jong, 2014; Freed, 2000; Kormos & Denés, 2004; Lennon, 2000). Bosker, et al, (2013) separated fluency measurement into three dimensions (following Skehan, 2003; Tavakoli & Skehan, 2005): breakdown fluency (filled and silent pauses and length of pauses); speed fluency (mean syllable duration); and repair fluency (number of corrections and

repetitions). Their study showed that breakdown and speed fluency variables accounted for 84% of rater judgement, and there was only a weak relationship (accounting for only 16% of the variance) between repair fluency and rater judgment. The main finding was that both L1 and L2 speech are subject to these dysfluencies, however, depending on the quantity and the position, they are either minimized by raters or taken as a sign of inefficiency (Segalowitz, 2010). As mentioned, Suzuki and Kormos (2020) found that speed fluency was most strongly associated with comprehensibility, while breakdown fluency (or frequency of mid-clause pauses) was a strong prediction of perceived fluency.

Another key variable in perceptive fluency is prosody, which refers to intonation or pace, rhythm, tempo and loudness. According to Wennerstrom (2001), these speech characteristics interact with syntax, lexical meaning, and segmental phonology to create meaning in the spoken utterance. Prosody is present in all languages but at the same time may be language specific. For example, pitch can express various levels of emotion, but intonation may not carry the same meaning in each language. In fact, some researchers (Lai, Evanini, & Zechner, 2011) suggest that non-native intonation patterns contribute to overall perception of accent and can impact the perception of fluency, and even comprehensibility.

Regarding the present study, following the research cited above (such as, but not limited to, Munro & Derwing, 1995a; Trofimovich & Isaacs, 2012; Suzuki & Kormos, 2020; Suzuki, Kormos & Uchihara, 2021; Wood, 2010; Zielinski, 2008), the following variables were identified as contributing to speech comprehensibility (see Appendix A):

- Articulation and word attack skills: Articulation refers to how accurately the vowels and consonants of English are represented in the speech sample. Word attack skills

relates to how well the speaker can use knowledge of English phonetics to verbalize unfamiliar words and may be considered a secondary indication of lexical richness.

- Intonation, stress, and hesitation: These fluency factors are complex and interrelated and can affect how the listener perceives the meaning of the utterance/text. Intonation refers to the ability to convey meaning of text, including use and misuse of punctuation markers; stress refers to the accentuation of the correct syllable or segment of syntax in conveying meaning; hesitation refers to whether pauses are noticeable and/or distracting.
- Speed and volume: Speed refers to whether the speed of delivery is monitored in such a way as not to interfere with articulation or the other variables; volume indicates that the degree of loudness is appropriate.

In this study, these variables form the basis for assessing improvement in order to answer the first research questions, *Did the use of the ePortfolio learning module implemented in a university EAP course foster the improvement of L2 learners' speech comprehensibility?* In addition, familiarity with these variables may provide teachers with insights for developing pronunciation instruction. The next section will explore how teaching pronunciation is generally approached in EAP classrooms.

#### ***2.2.1.1.5 Teaching pronunciation***

The main approach to teaching pronunciation has been and often still is to rely on face-to-face classroom instruction, which may take the form of drills or other controlled speech production activities with the teacher providing feedback (McCrocklin, 2014). The teacher is responsible for identifying errors or problems and modelling correct articulation; rarely is the student required to self-evaluate. For example, in their comprehensive textbook *Teaching Pronunciation: A*

*Coursebook and Reference Guide*, the majority of exercises and activities suggested by Celce-Murcia, Brinton and Goodwin (2010) are teacher-led, such as listen and imitate, minimal pair drills, or practice with tongue twisters. Only one of the ten main teaching techniques listed for teaching pronunciation as part of what they term *Pronunciation Teaching Today - Communicative Language Teaching* asks students to record their production for “teacher-, peer-, and self-evaluation” (pp. 9-10). In other words, in most pronunciation classes, students are encouraged to rely on their teachers for corrective feedback rather than developing skills and strategies for self-monitoring and evaluation. Although there is debate regarding the role of corrective feedback in second language acquisition (see Nassaji & Kartchava, 2017), students continue to ask for (and benefit from) some form of systematic corrective intervention. However, it may be difficult to find extra time for the type of pronunciation practice suggested by Celce-Murcia et al, (2010) in the context of a tertiary level EAP class. Classes may be large (25-30 students), and teachers do not have the extra time to devote to this activity.

Some researchers (see Dickerson, 1994; Sardegna, 2009) suggest that learners can benefit from introduction to predictive rules, such as links between spelling and pronunciation, and covert rehearsal, a language learning strategy that involves students speaking out loud and monitoring their own production. However, pronunciation is not simply a matter of knowing the rules and applying them. Learners must also learn how to control their motor functions in order to produce sounds that are different from the L1 sounds they are used to producing. Moreover, they must develop the ability to discriminate between “correct” and “incorrect” sounds (Flege, Munro, & Fox, 1993). Without access to feedback from a teacher, learners may find it difficult to hear their mistakes, and monitor and practice their pronunciation on their own. Therefore, students need to develop strategies and skills that enable them to improve pronunciation without

relying on teachers. In other words, they need to become more autonomous as pronunciation learners. However, although there are many studies regarding autonomy in language learning, few studies specifically address autonomy in pronunciation. Most researchers who focus on autonomy tend to avoid pronunciation in favor of reading and writing (McCrocklin, 2014).

One exception to this is Kruk (2012) who explored the use of online resources in developing learner autonomy in targeting the final -ed sound of the simple past tense of regular English verbs. His stated goal was to “determine whether increased autonomy results in greater pronunciation gains as well as to compare it with the effects of traditional instruction when it comes to individual students” (p. 113). His findings showed that those individuals who had access to the internet and exercises that focused on pronunciation practice obtained higher post-treatment test scores. His conclusion was that his research “provides a justification for using digital technology as a tool for promoting autonomy and teaching pronunciation” (p. 113).

Therefore, the question becomes, can students be encouraged to develop autonomy in the improvement of speech comprehensibility in the context of digital online learning? Considering the development of digital learning tools during the past few years, is it possible to create an environment for students that would fill the gap between the amount of practice needed and the limited amount of time available in tertiary level EAP classrooms with regard to fostering improvement in speech comprehensibility? Would these tools help them to continue to learn beyond the EAP class? Over the past five years, I have attempted to fill this gap for my students by having them create an oral language ePortfolio. As mentioned, in this ePortfolio, I asked students to video themselves speaking about a variety of topics and in a variety of contexts. With the use of speech-to-text software, I attempted to raise awareness of their issues in pronunciation and language use by asking them to identify discrepancies between what they thought they said

and what the speech-to-text software suggested they said. Once they identified the gap between their ability and their goal, they could address the particular area of weakness. In other words, as Schimdt (1995) suggests, "In order to acquire phonology, one must attend to phonology; in order to acquire pragmatics, one must attend to both linguistic forms and the relevant contextual features; and so forth. Nothing is free" (p. 17). I then encouraged them to design their own steps to improvement. I interacted with students in a number of ways, providing feedback, guidance, and instruction, with the goal of encouraging learner autonomy in the continued improvement of their speech comprehensibility beyond the EAP classroom. Because the learning module under study was housed and shaped by the use electronic portfolios and other technology, the next section addresses the mediating tools which were used to create the context that attempted to support, or more precisely, scaffold, autonomous learning in the improvement of speech comprehensibility.

### **2.2.1.2 Technology and mediating tools that support reflection and autonomous learning**

#### ***2.2.1.2.1 The importance of technology in fostering autonomy***

According to Benson (2011), various technology-based practices have been used in the development of autonomy in language learning, including student-produced and interactive video, electronic writing environments, and hypermedia (see Glossary for definition). He suggests that autonomy may be fostered and reinforced through the specific technological interaction or through interactions facilitated by the use of technology that compliment or extend those interactions that take place in the classroom. Language educators propose that access to such technologies provide learners with opportunities to exercise control or self-direct their own learning (Benson, 2011, Liu, 1095). However, as Benson (2011) observes, it is unclear whether these technologies actually foster the development of autonomous learning or if learners require

some degree of autonomy to take advantage of the affordances offered by the new technology. Thus, it becomes clear that the central issue is not the specific characteristics of the technology in question but the activities and support in the learning environment in which the technology is embedded.

The technology under investigation in this study is electronic portfolios. The following sections will first investigate the use of portfolios in language learning and then focus on electronic portfolios. The final section describes the activities and support within the ePortfolio learning module designed to help students take advantage of the affordances offered by this technology.

#### ***2.2.1.2.2 Portfolios in language learning***

According to Lam (2017), the use of portfolios originated in a variety of disciplines such as architecture, photography, and the fashion industry where they were used as a vehicle to display the professional's or artist's talent. Defined as a collection of work with a reflective component (Klenowski, Askew, & Carnell, 2006; Walker, 1985), they have been used for learning and assessment in education and professional development since the early 90s, representing "ongoing selections of learning and development over time" (Fox, 2017, p. 135). Portfolios, along with other types of alternative assessment such as observations, peer assessment, interviews, simulations, self-assessment, represent a shift in 'assessment culture' (Wolf, Bixby, Glenn, & Gardener, 1991) from assessing the outcomes of learning through standardized written tests to an investigation of the processes of learning. These types of assessment, of which portfolios are the most prevalent (Fox, 2017), involve, according to Lynch and Saw (2005) "... an investigation of developmental sequences in student learning, a sampling of genuine performances that reveal the underlying thinking processes, and the provision of directions and opportunities for further

learning” (p. 265). Lynch and Shaw (2005) go on to suggest that students should take an active part in the process by developing assessment criteria and selecting products to be assessed.

Traditionally, there are two main types of portfolios, showcase (product) and work-in-progress (process) (Fox, 2014; Fox & Artemeva, 2017). The purpose of the showcase portfolio is to display end of unit or end of course achievement. It serves as summative assessment, allowing teachers to assess whether particular competencies or course or program goals have been achieved (Fox, 2014; Johnson, Mims-Cox & Doyle-Nicoles, 2010). The purpose of the work-in-progress portfolio is *formative assessment*, which, according to Black and William (1998) encompasses “all those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged” (p. 7). They argued that in formative assessment for learning,

the teacher is responsible for designing and implementing an effective learning environment, and the learner is responsible for the learning within that environment. Furthermore, since the responsibility for learning rests with both the teacher and the learner, it is incumbent on each to do all they can to mitigate the impact of any failures of the other (Black & William, 2009, p. 4).

In accordance with this type of assessment, a work-in-progress portfolio allows for meaningful communication between the teacher and the student, or between the student and peers, with the goal of improving learning – and as such is assessment while learning (Black & William, 1998, 2001; Fox, 2014). Although what is to be assessed and how it is assessed in both types of portfolios require judgement (Fox, 2014), teachers are generally more involved in the selection and assessment of artifacts in the showcase portfolio, whereas learners have more control over this process in the work-in progress portfolios (Abdulhamid & Fox, 2020).

The use of portfolios within the classroom signaled a pedagogical shift from teacher/assessment centered to learner/learning centered, a classroom that is “more learner centered, collaborative, and holistic” (Genesee & Upshur, 1996, p. 99). Research indicates that there is considerable benefit for students when the portfolio is used as a work-in-progress (Abdulhamid & Fox, 2020; Fox & Fraser, 2012; Fox & Hartwick, 2011; Little, 2007). The work-in-progress portfolio encourages learner engagement (Little, 2005), improving self-reflection and an increased ability to set learning goals, both of which contribute to learner autonomy (Fox 2014) by enhancing “learner involvement and ownership of their own learning” (Genesee & Upshur, 1996, p. 99). Particularly in the language classroom, work-in-progress portfolios allow learners to maintain a record of their language development that can be revisited (Genesee & Upshur, 1996) “as a means of encouraging their reflection on and awareness of changes in their language over time” (Abdulhamid & Fox, 2020, p.171). Work-in-progress portfolios allow teachers and students to monitor the learning process more productively, providing opportunities for intervention that may enhance the learning process (Fox, 2017). This emphasis on formative learning is at the heart of the benefits derived from the use of portfolios in the language classroom. When the portfolio is used mainly for summative assessment, it risks becoming a static repository of graded items. As Abdulhamid and Fox (2020) state, when using the work-in-progress portfolio

[t]he focus is on the process of learning and interventions during the process to improve overall learning. The student is an active participant in the development of the portfolio, takes ownership of its contents, uses it to reflect on and improve learning. Conversely, showcase portfolios place the emphasis on achievement, and use of summative or Assessment of Learning (AoL) approaches to demonstrate what a student knows and can do. Often, teachers select what will be included in a portfolio as evidence of the student’s best work. The focus is on showing evidence of the outcomes or products of learning (p. 172).

With regard to the learning module that was the focus of this research, ePortfolios were used as a work-in-progress. The goal of the module was to promote reflective learning by providing a space where students could identify their own weaknesses and find ways to improve on them. The assessment was based on how engaged they were in the learning process, rather than the outcome of their efforts to improve their speech comprehensibility. The next section explores the use of electronic portfolios (ePortfolios) in the language classroom.

#### ***2.2.1.2.3 Electronic portfolios***

Clearly, portfolios offer many benefits in the context of classroom-based assessment. With the advances of technology, there is renewed interest in portfolios, now within a digital landscape. According to Papert (1980), the use of computer technology affords opportunities for learners to interact with and manipulate dynamic systems, exploring the world in different ways, including the workings of their own minds. This enables learners to “to modify, duplicate, document, and share their creations in ways they never could before, providing new ways for them to explore and understand the creative process” (Resnick, 2020, p.14, location 80). Many learners in today’s classrooms have grown up with a variety of technologies, using them from an early age. Prensky (2001a) referred to these individuals as “digital natives,” indicating that they have a familiarity with digital devices and suggesting that they process information differently from their predecessors (Dede, 2005; Prensky, 2001b). Dede (2005) suggests that the “neomillennial” learning style of digital natives is, among other things, “a balance among experiential learning, guided mentoring, and collective reflection” (p. 7) and that they expect to participate in the designing of their learning experience in order to personalize it to their own particular needs and preferences. Thus, according to these researchers, the ePortfolio may appeal to the 21<sup>st</sup> Century students in a way that paper-based portfolios cannot.

The ePortfolio is similar to the paper-based portfolio in that it is situated within a constructivist perspective of learning (Barret & Carney, 2005; Stefani et al., 2007), where knowledge is constructed within a particular context, and the learner is an active participant in the learning process, rather than a passive recipient of knowledge. It encompasses reflective and evaluative pedagogies – approaches to learning that involve learners in considering their own experiences and applying knowledge to practice (Lin, 2008). However, as one of several e-learning tools and technology, it is designed to emphasize student-centered learning and allow for personalized forms of education (Gray, 2008). It is positioned in a digital landscape with which the digital natives may be familiar and provides a range of affordances that may support learner autonomy (Reinders, 2018; Reinders & Hubbard, 2014), such as allowing learners unprecedented access to resources, and easy storage and retrieval of learning and teaching materials as well as learning records (Reinders, 2018; Reinders & Hubbard, 2014). It enables students to collect various forms of evidence of learning across disciplines and educational contexts (Rowley & Munday, 2018), easily available for examination by prospective educators and/or employers. It has a capacity to “demonstrate the education of the whole person, rather than discipline by discipline, by providing a platform to demonstrate the interconnection of knowledge” (Boesch, Reynolds & Patton, 2016, p.443). According to Driessin et al, (2007) ePortfolios were found to “enhance students' motivation, were more user-friendly for mentors, and delivered the same content quality compared with paper-based portfolios. This suggests that web-based presentation may promote acceptance of portfolios by students and teachers alike” (p. 1067). Gathercoal et al., (2007) describes the ePortfolio as “the next great innovation in education (p. 641). Lewis (2017) indicates that it may be used effectively to develop attributes identified as essential for the 21<sup>st</sup> century workplace: individuals who can be critical thinkers,

flexible, adaptive, integrative, and reflective (Gray, 2008; Peet et al, 2001). How ePortfolio pedagogy is used to support the theoretical framework of this study is elaborated more fully in Section 2.2.3.2 (p. 104) which discusses the pedagogy of ePortfolios.

As with a paper-based portfolio, ePortfolios can be used both as a product and a process (Barrett & Wilkerson, 2004). Where it is conceptualized as a product, it functions as a “digital repository or storehouse” (Lewis, 2017, p.72). It is used as a tool where the focus is on content, digital conversation and collection (Barrett, 2010). Where it is conceptualized as a process, as in the learning module under study, the ePortfolio is used more for self-appraisal and reflection over time, involving *formative assessment* for learning (Black & William, 1998; 2001). Here the learner creates an integrated learning or developmental portfolio (Matthews-DeNatale, 2013) which involves an iterative cycle of creating, reflecting, incorporating feedback, reviewing, re-creating, etc. This type of portfolio is grounded in what Black and William (2009) suggested are the three key questions in formative assessment that teachers might ask about learners, or more importantly, that learners might ask and answer for themselves:

- What do I already know?
- What do I want or need to know?
- What needs to happen or be accomplished to get me there?

Clearly, whether it is product or process oriented, portfolios in teaching and learning are student-centered, inviting the learner to take an active role in determining the “purpose, content, rhythm and method of their learning, monitoring its progress and evaluating its outcomes” (Holec 1981, p. 3), a key factor in cultivating deep learning that continues throughout the lifetime of the learner. Reflection within the digital space provided through the use of the ePortfolio allows for flexibility in the type of reflection. For example, it could take the form of oral reflection, artistic, or multimedia. There is also the opportunity of incorporating other forms

of media in the portfolio and maintaining a variety of records pertaining to progress, for example through video, recording, images, or the printed word. For the purposes of this study, Automatic Speech Recognition (ASR) software was used to create a visual record of students' speech. The next section will describe this technology in more detail.

#### ***2.2.1.2.4 Automatic Speech Recording (ASR)***

According to Reinders and White (2011), technology provides “increased affordances for autonomous learning” (p. 1), which, in turn, allows learners more control and empowerment over their learning processes and outcomes (Reinders, 2018; 2020). In accordance with this, speech recognition (SR) software allows learners to position themselves as speaker and critical observer, thus encouraging autonomous learning. SR in its simplest form, is the process of using computer software to interpret and transcribe the meaning of a speaker's utterances. According to *Techopedia*, it is

an interdisciplinary subfield of computational linguistics that develops methodologies and technologies enabling the recognition and transcription of spoken language into text by computers. It is also known as automatic speech recognition (ASR), computer speech recognition or speech to text (STT). It incorporates knowledge and research in the fields of linguistics, computer science, and electrical engineering.

<https://www.techopedia.com/dictionary>

There are two types of SR systems – speaker-independent and speaker-dependent. The speaker-independent system matches speech signals against already existing models and is used in telecommunication applications. The speaker-dependent system uses the speaker's own voice, fine tuning it for transcription (Liaw, 2018). SR technology has been intensely researched by such companies as AT&T, Microsoft, and IBM. In addition, academic research groups around the world are focused on the development of this technology, such as the Center for Language

and Speech Processing at Johns Hopkins University, Language Technologies Institute at Carnegie Mellon University, the Department of Language and Speech at the University of Nijmegen in the Netherlands, the Speech Technology Group at the University of Madrid, and the ELIS Laboratory at the University of Ghent in Belgium. Over the past decades, ASR technology has been increasingly used in L2 teaching and learning. More than 20 years ago, Ehsani and Knodt (1998) reviewed the use of SR and predicted that it would eventually become an essential component of L2 education, and Coniam (1999) concluded that although there were still many issues with the use of the technology, in the future it might be used successfully as a means of giving corrective feedback. He suggested that, using a more accurate version of the software, learners might consider a computer error in transcription as an indication that there was a problem with the pronunciation of that word that needed attention. This aspect of ASR was explored in the ePortfolio learning module investigated in this study. Participants underlined inaccuracies in the transcription of their speech and attempted to analyze what was causing the problem. Successful use of this aspect was, in part, due to the fact that it was used with advanced L2 learners focused on refinement of speech comprehensibility rather than strategies for basic pronunciation. As Coniam (1999) suggested, continuing advancements in research have helped to reduce contextual ambiguities, increase the accuracy rates of recognition, and adjust for pronunciation discrepancies, thus making it a successful means of corrective feedback in the more advanced levels. According to Liaw (2018), “the ultimate goal of SR technology is to be able to accurately interpret all words that are intelligibly spoken by an individual regardless of vocabulary size, background noise, or speaker variables” (p. 1).

As with many other advances in technology, SR has been used in the improvement of language learners’ reading competency and pronunciation (Aist, 2002; Campbell, 2008; Liaw,

2014); nevertheless, researchers have reported varying degrees of success (Chen, 2017; Derwing, Munro & Carbonaro, 2000). Below is a short summary of some of their findings.

- Bernstein, Weintraub, Cohen and Murveit (1989) were among the first to publish a study investigating SR computer-assisted language learning (CALL), in the context of fostering pronunciation. They evaluated the use of an automatic scoring system in assessing English spoken by Japanese students and found that the automatic evaluations correlated well ( $>0.8$ ) with expert human raters. It is possible for the system to identify errors and communicate this information to the speakers, and thus provide immediate feedback when one-on-one feedback is not available. This is both motivating and helpful for L2 learners, and provides an anxiety reduced environment to practice oral speech.
- Derwing, Munro and Carbonaro (2000) explored the use of a speech-to-text software and found that the program was considerably less accurate than a human listener at recognizing and transcribing Cantonese accented English.
- Chen (2011) found that as the technology improves and the Internet provides a platform for easily accessible learning spaces, software supporting L2 learning utilizing SR technology is becoming increasingly available. He explored the use of the Microsoft Speech Application SDK (<https://www.microsoft.com/en-us/download/details.aspx?id=682>) in developing oral skills for EFL students. The Microsoft Speech Application is a set or kit of development tools that allows developers to incorporate speech functionality into Web applications. He found that the greatest advantage was the ability of the website to provide a relaxed

environment that reduced anxiety in its users and encouraged otherwise reticent L2 learners to engage in practicing oral language skills.

- Liaw (2014, 2018) found that the main difficulties encountered in the various software programs were responding to the variety of accents, slurring of short words, modification of the beginning and endings of words and misarticulation of relevant sounds. However, he found that a free online site launched by Google (<http://EnglishCentral.com>) in 2009 had received generally positive reviews from its users. This website allows learners to identify their learning level, select videos to listen to and repeat words or sentences, receiving feedback on their pronunciation.

There are two main drawbacks to these programs. The first drawback is that they rely on specified input. In other words, the software is programmed or trained to recognize a specific number of phonemes and the learners are prompted to produce these utterances. But many learners would like feedback on different types of speech acts, for example, answers to test questions, responses in group discussions, or presentations. Software is not readily available that can evaluate a stream of speech that is produced spontaneously, reflecting the speaker's ability for online processing of oral speech. The software packages described above are useful when initially training L2 learners in the pronunciation of certain sounds but may not help the more advanced learner when dealing with such issues as academic or professional presentations on specific topics in engineering or science, for example. The second drawback is that there is often a cost connected with the more advanced types of software. The packages that are available online, free of charge, are often fairly simple in their approach and do not give the learner much choice in input. It is still difficult for learners to obtain an evaluation of their speech on subjects

of their choice at advanced levels. If learners are to exercise autonomy in their improvement in pronunciation, and thus continue this improvement beyond the ESL classroom, they need a method (and software) that may be adapted to their needs and goals, whatever they identify those to be. As mentioned, autonomy is supported by reflecting on the gaps in their ability and exploring ways and methods of closing those gaps.

With the improvement in SR technology, speech-to-text transcription has provided a platform for reflection and has been incorporated into pronunciation practice. These programs eliminate the need for learner transcription of recordings, as the program automatically transcribes learner utterances. As mentioned, early SR-based dictation programs were criticized for lack of accuracy in identifying utterances and the lack of explicit feedback for L2 pronunciation practice (Coniam, 1999; Derwing, Munro & Carbonaro, 2000), and basically dismissed as a useful learning technology. However over the past decades the accuracy of these SR-based dictation programs has improved. The main drawback of these programs is that they do not provide analysis of speech. The main benefit is that they allow for flexibility in what the learner wishes to transcribe, and such self-directed work may “foster greater levels of student autonomy in pronunciation learning” (McCrocklin, 2019, p. 121).

As the SR technology has improved, there has been renewed interest in the use of SR-based dictation programs in pronunciation classes. Although, in general, there is still limited research on these dictation programs, researchers have begun investigating the results of applying this technology in the ESL pronunciation classroom. One such study, using a pre-/post-test design, compared the accuracy of the production of the French vowel /y/ in three groups (a SR-dictation practice group, a non SR-pronunciation training group, and a control group). The results showed that only the SR-dictation group made statistically significant improvements (Liakin, Cardoso &

Liakina, 2014). In another study, McCrocklin (2019) found that in a pre-/post-test design, learners using SR-dictation for part of their production practice improved slightly more than those learners in a face-to-face instruction group. Further, Mroz (2018) found that learners enjoyed using SR-dictation because they believe it replicates how well the human listener understands them, and Wallace (2016) suggested that SR-dictation practice could help in the noticing of frequent errors.

Researchers have also noted that there are challenges associated with using SR-dictation technology. The most frustrating aspect, according to McCrocklin (2019), is the perceived low recognition of sounds learners believed that the human listener could understand. Many participants in McCrocklin's study reported making several unsuccessful attempts at recording a word or phrase that they felt was easily understood by a human listener. Several participants reported that there was a 'bug' in the program, or the program just 'didn't work.' Several participants reported using additional practice methods, such as using an e-dictionary to help with pronunciation or practicing speaking aloud before using the speech recognition software. In one sense, however, these challenges may indicate the success of the software program. It may show that learners are not as accurate at pronouncing familiar words as they believe they are. It also shows that it contributes to the development of autonomy in that it encourages learners to discover other ways of improving their pronunciation, strategies that each learner may find personally helpful.

In conclusion, although many researchers have identified the use of technologies such as ASR and the ePortfolio as pedagogic tools that support and foster the reflective and adaptive learner that will thrive in the 21<sup>st</sup> Century workplace, others suggest that using these digital tools can be disruptive (Joyes, et.al. 2010; Lewis, 2017). According to Lewis (2017), it is essential to

identify the learning purpose of digital tools such as the ePortfolio within the curriculum. “The assumption that the ePortfolio is one discrete thing belies the complexity and potential of the technology to be used for both its tool and pedagogic purposes” (Lewis, 2017, p. 73). In other words, unless the potential of the ePortfolio and other digital tools as learning strategies is clearly understood, they may remain simply as ‘add-ons,’ a concession from digital immigrants to digital natives, rather than methods of enhancing student learning.

#### ***2.2.1.2.5 The ePortfolio learning module under study as it supports reflection and autonomous learning***

Relative to the research above, the ePortfolio learning module that is the focus of this study used the ePortfolio pedagogy (Eynon, Gambino, & Török, 2014) and ASR together as a platform to foster autonomy in the development of speech comprehensibility, combining the aspects described above. Learners created videos of themselves speaking in an informal manner, without preparation on a general topic, and at the same time ran ASR software which created a transcript of the speech. They then posted these videos of themselves speaking English in their ePortfolios. The videos helped them form a clearer picture of how they appear when they are speaking English. In addition, through recording what they were saying using ASR, they gained a better understanding of how they sounded to a listener. After posting the video, they were asked to listen to it again while reading the transcript and underline any inaccuracies in the text. Once they videoed and recorded themselves, and identified problem words, learners were guided through a series of scaffolding questions into deepening reflections on their performance, identifying areas of confusion. They then examined a list of internet resources provided to them and decided which ones to engage with in order to improve. At the same time, they reviewed past performance and goals, assessing their progress. It was the interaction of these activities

over time within the ePortfolio that created the autonomous learning context and allowed for the fostering of reflective and autonomous learning.

However, many questions remained. Did their speech comprehensibility improve during the EAP learning module? Were they able to ‘notice’ their problems through the use of digital tools, or did they need a human interlocuter to point out the problems? Did they perceive the ePortfolios as useful, informative – as a learning tool? Did they use the ePortfolios after the course was finished, continuing to monitor or showcase their progress? In other words, by fostering autonomous learning, could the ePortfolio learning module fill the gap between what L2 learners needed to improve comprehensibility and the amount of time available in the curriculum to address their issues? These questions were the motivation for this research.

As stated in the above discussion, researchers suggest that reflection and autonomous learning are aligned with the use of portfolios in educational contexts, and particularly in language teaching. Thus, the following sections explore theoretical research related to autonomy and reflection.

## **2.2.2 A summary of theoretical research informing this dissertation**

### **2.2.2.1 Autonomy and language learning**

#### ***2.2.2.1.1 The importance of autonomy in language learning***

Little (2020) after forty-five plus years as a language teacher, researcher, and educator, expressed the importance of language learner autonomy in the following quote:

For me, ‘language learner autonomy’ denotes a teaching/learning dynamic in which learners plan, implement, monitor, and evaluate their own learning. From the beginning they do this as far as possible in the target language, which thus becomes a channel of their individual and collaborative agency. By exercising agency in the target language, they gradually develop a proficiency that is reflective as well as communicative, and the target language becomes a fully integrated part of their plurilingual repertoire and identity (p. 1).

He goes on to say that as an inexperienced language teacher, encountering the *dynamic* of learner autonomy allowed him to conceptualize how to help his learners become “spontaneous, confident and fluent users of their target language” (p.1).

The concept of autonomy is not new. According to Benson (2006), the idea of individual autonomy is based in European philosophical writings of the 18<sup>th</sup> and 19<sup>th</sup> centuries, particularly those of Kant (1724-1804) and Mill (1806-1873). These writers expressed the belief that democratic society is “founded on the exercise of individual autonomy and respect for the autonomy of others” (p. 31). Therefore, according to these philosophers, an important goal of education should involve the nurturing of values that promote the individual’s active participation in a democratic society. In the 20<sup>th</sup> century, partly as a result of changes in the availability of information in the 50s and 60s, and the impact of technological developments such as the computer and the internet (Beaven, 2021; Reinders, 2018), learners needed the skills to navigate large amounts of new information, selecting what was useful and relevant to them as individuals in relation to their goals. Thus, education was changing. There was no longer a specific body of knowledge that could be transferred from teacher to student; it was becoming impossible to teach learners all they needed to know. Learners had to take a more active part in selecting the knowledge they needed to pursue (Reinders, 2011; 2021). As Reinders (2011) described it,

Changes in the ways societies work, learn and live, have thus led to the need for life-long learning skills, or the ability to direct one’s own learning and to respond to changes in one’s situation by choosing and managing future learning in the most appropriate way. (p. 39)

In line with this thinking, psychologists such as Kelly (1955), Bruner (1966), and Maslow (1968) emphasized that the main actors in learning were the learners, not the teacher, and that, in fact, it

was the learners who could truly chart their educational path and assess whether their goals had been achieved (Rogers, 1969).

The theory of learner autonomy as it pertained specifically to language teaching and learning may arguably be traced to the publication of Holec's report, *Autonomy and Foreign Language Learning*, published in 1979 (published in book form by Pergamon Press in 1981). Holec wrote this report as part of the Council of Europe's exploration of the theory and practice of adult education. The basic principle was that adult education should "develop the individual's freedom by developing those abilities which will enable him to act more responsibly in running the affairs of the society in which he lives" (Holec, 1981, p.1). Underpinning the theory was the idea that an individual should move from being "a product of society" to becoming a "producer of society" (Trim, 1978, p.3). Holec also implied that adult language learning should be focused on meeting the specific needs and goals of the learner, rather than on the goals and objectives of the teacher or program. This ideal was described in a document outlining the principles and goals for the Council of Europe's language training program. According to Trim (1978), one of the Council of Europe's ideals was to

... make the process of language learning more democratic by providing the conceptual tools for the planning, construction, and conduct of courses closely geared to the needs, motivations, and characteristics of the learner and enabling him so far as possible to steer and control his own progress (Trim, 1978, cited in Little, 2007, p.16)

Holec distinguished between the two concepts of autonomy and self-directed learning, stating that autonomy was a quality of the learner and related to the ability to take charge of personal learning (Palfreyman, 2021). In other words, the learner must "*know how* [sic] to make the decisions which this involves" (Holec, 1981, p. 7). Self-directed learning, on the other hand, was

a characteristic of the learning environment. Holec (1981) stated that “there must be a learning structure in which control over the learning can be exercised by the learner” (p. 7). According to Holec, the problem for the education system was designing learning systems that ‘allow both for the acquisition of autonomy and self-directed learning’ (p. 8). Developing autonomous learning skills demands a serious investment of time and cognitive energy on the part of the learner (Holec, 1981) and unless they are prepared for and supported during this challenge, programs that rely on autonomous learning have a high chance of failure (Reinders, 2018). According to Griffiths (2015) successful learners spend time identifying goals and planning methods of achieving these goals, and this in turn helps maintain motivation (Huang & Benson, 2013). As a result, “they are more likely to feel - and be - in control of their own learning” (Reinders, 2020 p. 136). Although some learners may naturally be more adventurous or resourceful when it comes to their learning, all learners can be encouraged to think of what they would like to achieve and be supported in developing this into a clear set of goals. According to Reinders (2021) “the ideal outcome of education is not only to have developed their language skills to a desired point but also to have developed their language *learning* [sic] skills so as to enable them to continue to learn without the help of a teacher” (p. 63). The next section explores literature related to developing and supporting autonomous learning skills.

#### ***2.2.2.1.2 Becoming an autonomous learner***

According to Benson (2006), Holec conceived of learner autonomy as most relevant to the adult language learner who was unable or disinclined to attend traditional classroom-based language courses; it referred to self-instruction and did not necessarily consider any theory as to how learners acquired a second language (Little, 2020). If the ‘dynamic’ were to be applied to classroom teaching, that is, if teachers were to nurture autonomous learning in their classes, then

the concept would have to be re-conceptualized (Benson 2006). For example, the learning theory of Vygotsky (1978, 1991), particularly the zone of proximal development (ZPD) (see Glossary for a definition of the term), emphasized the social nature of learning and focused on social mediation and the social environment as being crucial aspects of learning. According to Gage (1989) students and teachers construct shared meaning in the classroom i.e., constructivism. Within this vein, social constructionism (Papert & Harel, 1991) was deeply concerned with the context and the manner of learning. According to Papert (1991), constructionism

shares constructivism's view of learning as "building knowledge structures" irrespective of the circumstances of learning. It then adds the idea that this happens especially felicitously in a context where the learner is consciously engaged in constructing a public entity, whether it's a sandcastle on the beach or a theory of the universe" (p.1).

Where constructivism focused on the cognitive processes of the individual in the construction of knowledge, social constructionism purports that knowledge is constructed through social interaction in a particular context and may or may not correspond to something in the real world. As explained by Gergen (2004),

the terms in which the world is understood are generally held to be social artifacts, products of historically situated interchanges among people. Thus, the extent to which a given form of understanding prevails within a culture is not fundamentally dependent on the empirical validity of the perspective in question but rather on the vicissitudes of social process (e.g., communication, negotiation, communal conflict, rhetoric) (p. 184).

In other words, knowledge consists of beliefs that people agree on or generally believe to be true i.e., represent an empirical reality (Andrews, 2012). Understanding of the world is socially constructed and shared in a particular context, and may be both objective and subjective.

According to Ushioda (2006) learning takes place as the learner develops the ability to control strategic thinking processes through interaction between learner and expert as they focus

on accomplishing a task. Ushioda (2006) argues that these processes are developed within a social environment that supports a learner's sense of autonomy in pursuing "optimal challenges through the zone of proximal development" (p. 15). The notion of autonomy as a characteristic specific to a student learning alone was changing and theorists were suggesting that autonomy could and should be exercised in a classroom context.

Thus, over the next decade a number of researchers re-examined the idea of learner autonomy through the lens of social interaction with a view to incorporating it into classroom pedagogy. Dickenson (1992) noted that learners often behaved independently in the classroom, a form of autonomy, suggesting that teachers should notice this behaviour and develop it. Dam (1995) demonstrated that learner autonomy did not simply mean learner independence; it could be a vital part of the collaborative classroom, stressing the idea of interdependence of teacher and learner, and began researching how principles of autonomy could be integrated into classroom teaching. Nunan (1995) explored the characteristics of a learner-centered curriculum, stating that, in such a curriculum, "key decisions about what will be taught, how it will be taught, when it will be taught, and how it will be assessed will be made with reference to the learner" (p. 134). Little (1991, 1995) argued that autonomy was not a pedagogy but a characterization of the relationship between the learner and the teacher and expanded the notion of interdependence over independence in learning, noting that the idea of a learner working in complete isolation, in charge of all aspects of learning was not possible due to the social nature of learning itself. As Little and Dam (1998) suggest:

We are social creatures, and as such we depend on one another in an infinity of ways. Without the stimulus and comfort of social interaction, for example, child development is disastrously impaired: it is our condition that we learn from one another. Thus, the independence that we exercise through our developed capacity for

autonomous behaviour is always conditioned and constrained by our inescapable interdependence. In contexts of formal learning as elsewhere, we necessarily depend on others even as we exercise our independence (p. 8).

Thus, according to Benson (2001) interdependence "implies working together with teachers and other learners towards shared goals" (p. 14). This interdependence indicates that learners benefit from direction and guidance as they gain control over their learning needs and goals. In other words, autonomous learning must be guided and nurtured, gradually increasing learner participation in decisions about objectives and assessments generally reserved for the teacher (Åsa & Suojala, 2020; Palfreyman, 2021). As Benson (2006) states "learners do not develop the ability to self-direct their learning simply by being placed in situations where they have no other option" (p.22). They need guidance in order to develop "the ability to take charge of [their] own learning" (Holec, 1981, p.3). Learner knowledge is constructed through this social interaction between the learner and the teacher (Benson, 2006). According to Dam (2003) citing the Bergen definition which was developed collaboratively during the 1988 Fifth Nordic Workshop on Learner Autonomy (Bergen, 1990, p. 102), the role of the teacher is important. "It is essential that an autonomous learner is stimulated to evolve an awareness of the aims and processes of learning" (Bergen, 1990, p. 102). In fact, according to Little (2020a), underestimating the role of the teacher in supporting the autonomous learner is a mistake. In an autonomous learning context, the teacher is still in control, teaching learners the reflective habits necessary to make informed decisions. It is the teacher's responsibility to provide targeted scaffolding to guide learners as they develop an understanding of the curriculum goals, the appropriate questions to ask in order to make their own decisions, and the tasks they should engage in once they have made their decisions. However, Dam emphasizes that the learner is still central to the process:

Learner autonomy is characterized by a readiness to take charge of one's own learning in the service of one's needs and purposes. This entails a capacity and willingness to act independently and in co-operation with others, as a socially responsible person. An autonomous learner is an active participant in the social processes of learning, but also an active interpreter of new information in terms of what she/he already and uniquely knows. (Bergén 1990, p.102 as cited in Dam 2003, p. 137).

In other words, the autonomous learning context is a context that is jointly created by the teacher and learner where language learning is a result of language use. As Little (2020a) describes it, learners “should enter a discourse world that is partly their creation and whose purpose is to draw their identity in to the target language” (p. 4). As learners are encouraged to create their own discourse in the target language, they begin the task of creating their unique identity in that language.

Benson and Voller (1997), in recognizing the complexity of this social interaction and the cognitive processes underlying the development of the autonomous learner, defined three versions of autonomy: the technical, the psychological, and the political (p. 14). According to Benson (1997), technical autonomy emphasizes the necessity to support learners by equipping them with skills and strategies so that they may be prepared to take charge of their learning in a variety of situations; (p. 14, 19). The psychological version of autonomy focuses on the “capacity,” or attitudes and abilities that support taking control of learning. The political version of autonomy focuses on institutional support of methods and content that foster student-centered learning (p. 19). Therefore, according to Benson, an autonomous learning context must show learners how to take control of their learning, explain the personal benefits of doing so, and enable true control by shifting power residing in selection of methods and assessment from the teacher or program to the learner. Ciekanski (2007) presented a similar definition of the three

factors that foster autonomous learning. According to Ciekanski, the *economic argument* supporting the importance of fostering autonomous learning identifies the learners' ongoing need for life-long learning, and the skills and strategies necessary to accomplish this. This argument relates to Benson's technical version of autonomy, which is focused on providing skills and strategies. Ciekanski's *psychological argument* states that learning is more productive if the learner feels in control and focuses on developing the attitudes that support autonomous learning. Finally, Ciekanski's *ideological argument* is related to Benson's political version of autonomy, where both versions focus on the institutional empowerment of the learner to exercise control over personal choices.

Little (2007) and Little, Dam and Legenhausen (2017) suggest that pedagogy oriented towards learner autonomy in language learning rests on three interacting principles: learner involvement; learner reflection on the learning process; and engaging the target language in the fulfilment of the first two principles, i.e., using the target language in authentic communicative contexts. Each of these principles relies on some form of interdependence as the learner gains confidence in exercising autonomy. In fact, they indicate that, along with improvement of language proficiency, an explicit goal of language teaching should be the development of learner autonomy. In order to do this, it is essential to understand learners' beliefs because humans are designers of their own actions (Argyris & Schön, 1974) and "behind all actions there are beliefs that underpin them" (Zhong, 2010, p. 210). Thus, by investigating the beliefs learners hold about their learning, teachers can assess readiness for autonomous learning and modify their guidance as needed (Cotterall, 1995). In order to understand the beliefs that learners hold about their learning, learners must first become conscious of these beliefs (Reinders, 2011) and then verbalize them. They must reflect on the tasks they are asked to accomplish and communicate to

themselves and others how they interacted with these tasks. Based on the preceding discussion, the next section explores the aspects that need to be present in a learning context for it to foster autonomous learning.

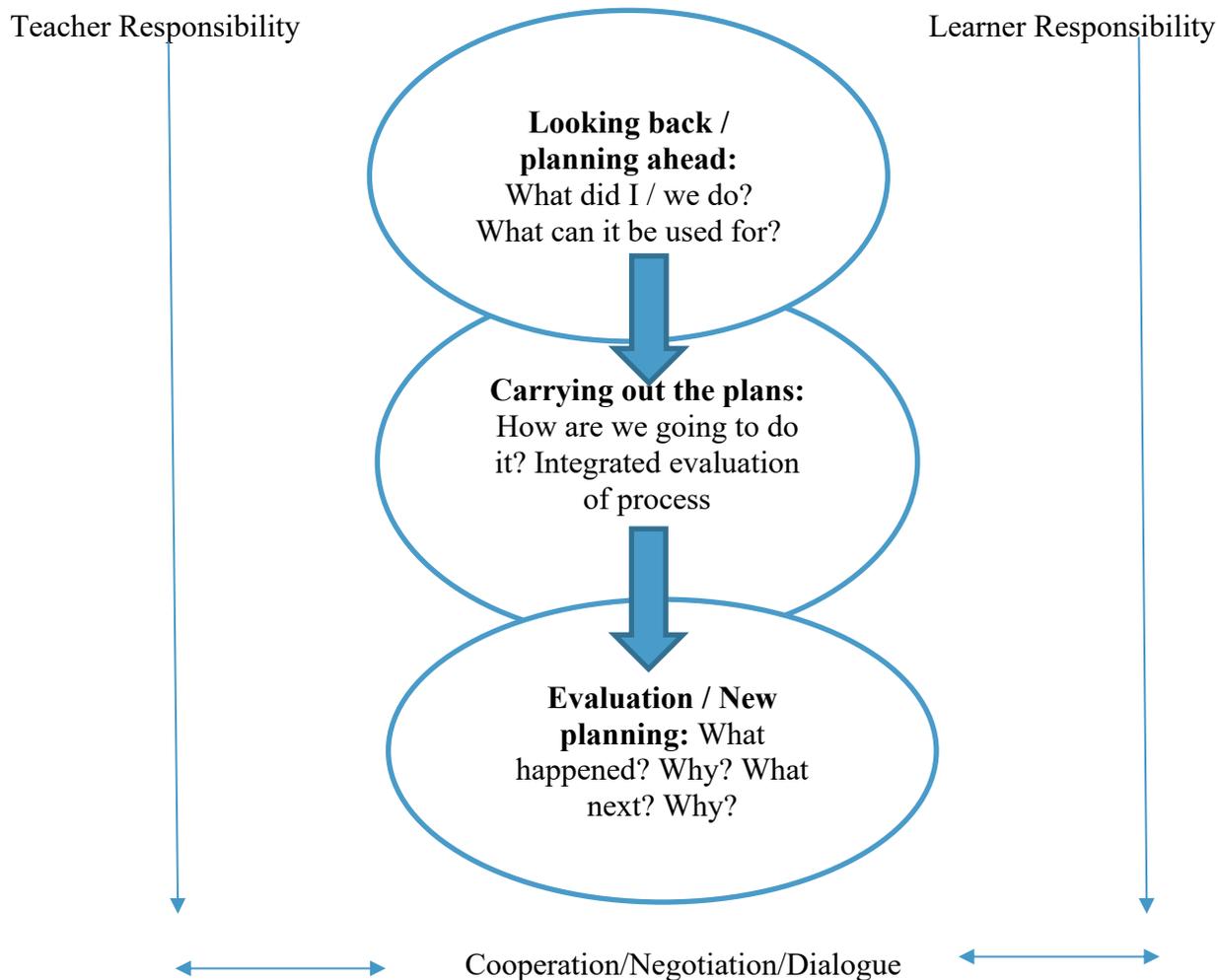
### ***2.2.2.1.3 Modelling autonomous learning***

According to Dam (2007), an autonomous learning context which takes place in the classroom is one that is negotiated between teacher and learners. In other words, the responsibility of developing learner autonomy is a joint undertaking that gradually shifts power and control from the teacher to the learner and, depending on the individuals, may begin and end at any point on the continuum. Figure 2.2 shows a graphic representation of the critical reflective steps in a learner-centered learning environment and the teacher's responsibility in developing learner autonomy. Both teacher and learner are involved in the central aspects of the learning environment – looking back/planning ahead; carrying out the plans; and evaluating/new planning – but the interaction between teacher and learner is one of co-operation, negotiation, dialogue rather than a top-down dissemination of information. Gradually, as learners become adept using the skills and strategies, there is less negotiation and more dialogue.

**Figure 2.2**

*The Teacher's Role in Developing Learner Autonomy* (Dam, 2007, p.137)

### LEARNER-CENTERED LEARNING ENVIRONMENT

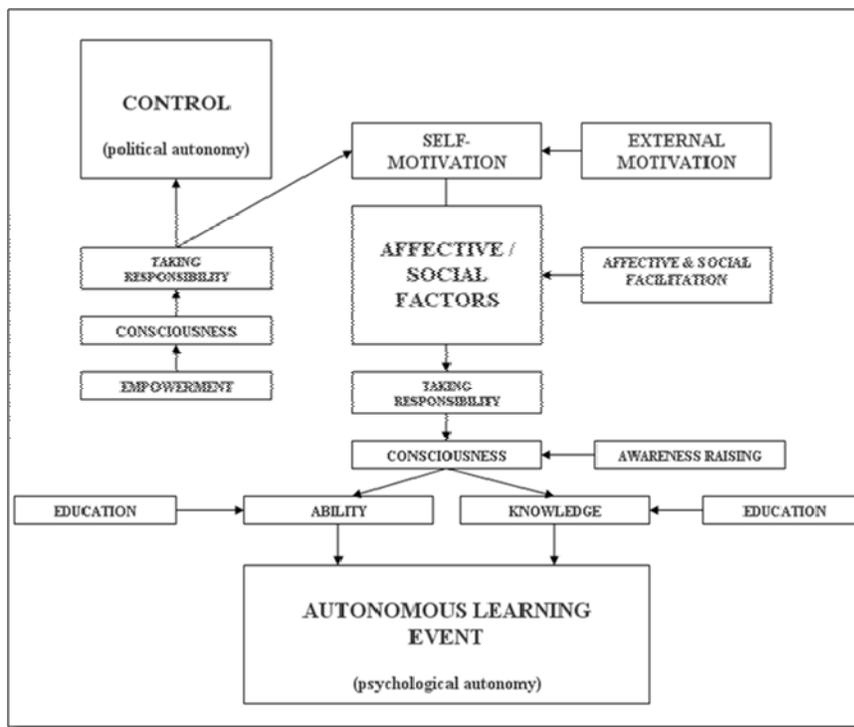


Reinders (2011) developed a model of autonomous learning (Figure 2.3) which shows how elements such as program support and social and psychological aspects affect the motivation of the learner to take control. In this model, the elements of control (political aspects of autonomy) are shown on the left. According to Reinders's model, learners may be presented with the

opportunity (i.e., empowered by the program/curriculum) to take responsibility for their learning, but in order to do this, they need to be aware of the purpose or benefits of taking control and actively engaged in the process, in other words, self-motivated. Within the education system, students may be empowered through guidance to become aware or conscious of the opportunities for taking responsibility. This empowerment then relates to external motivation (shown on the right) provided by teachers and materials. If learners become motivated to actively take control of their own learning, then external motivators such as teachers, methods, materials can help to foster this self-motivation, thus aiding in the development of autonomy. Even if the opportunity for autonomous learning is offered and learners are scaffolded in their efforts to take responsibility for their learning, affective factors, such as anxiety or lack of motivation affected by beliefs (see Henter, 2014) may impede the process. In order to address these factors, a degree of consciousness is necessary, and this can be facilitated in the learning context through awareness raising activities. Learners need knowledge of their own state of mind as well as the requirements of the task. They also need the skills or ability to plan, monitor, and evaluate their learning. Education can support and promote both the understanding or knowledge and the acquisition of the necessary skills needed to participate in an autonomous learning event. Part of the development of the necessary knowledge and ability is helping learners to become aware of their beliefs toward their own learning, and this is accomplished through reflection.

**Figure 2.3**

*Model of Autonomous Learning* (Reinders, 2011, p. 47)



As can be seen from the Reinders's model (Figure 2.3), many factors contribute to the success of an autonomous learning event. There must be awareness of the goals and opportunities of such an event on both the part of the teacher and the learner for there to be the interaction needed to scaffold autonomous learning. As mentioned, this awareness is cultivated through reflection, beginning with reflection on beliefs about learning that affect both learners and teachers. In this dissertation research, *belief* was defined as a "proposition which may be consciously or unconsciously held, is evaluative in that it is accepted as true by the individual, and is therefore imbued with emotive commitment; further, it serves as a guide to thought and behaviour" (Borg, 2001, p.186). Both Borg (2001) and Senior (2006) emphasize the significant role that belief systems play in teaching and learning, and in life in general. Belief systems function as a lens through which individuals view the world, shaping the acknowledgement and

uptake of new information. With regard to the classroom, both students and teachers arrive with a fixed set of beliefs and expectations, implicit and explicit, about classroom management, including what should be taught and how it should be taught. With regard to this study, my belief, based on experience in the classroom, was that students needed to improve their speech comprehensibility, and I also believed that I had neither the expertise nor the time to help them in the ways they needed to be helped. Students did not necessarily share these beliefs; often being unaware of their pronunciation issues and/or indicating that it was my job to fix them. Thus, for learners to become fully engaged in the autonomous learning context, it was important to uncover their assumptions and raise their awareness, both in relation to my ability to manage classroom activities and their ability to gain the most from the activities available through engagement with the ePortfolio learning module. This was supported by encouraging students to engage in reflection on the assignment as a whole and on their performance. Through reflection the autonomous learning event was made possible.

#### ***2.2.2.1.4 Operationalizing autonomous learning***

The preceding discussion has illustrated the complexity of the notion of learner autonomy. Many theories have been put forward over the past decades that have attempted to define the concept, but these theories are often very broad, containing many concepts such as motivation (Woodrow, 2016), awareness (Derwing, 2017), and proactivity (Cansino, Román, & Expósito, 2018). This results in a concept that lacks specificity, making it difficult to operationalize in such a way as it can become useful for the language teacher. The fact is, most studies on learner autonomy have focused on a specific learning event and whether autonomous learning was demonstrated in the accomplishment of the tasks (see Chinpakdee, 2020, for a review). From this point of view, then, it seems clear that it is necessary and useful in a research context to make a distinction between

learner autonomy and autonomous learning. With regard to Reinders's model above (Figure 2.3), as it depicts a particular learning event, it could be suggested that, in fact, the way learning is achieved may be context specific. A learner may be quite confident and in control of the learning situation in one context, but in another context, where affective factors are predominant or the educational system does not support learner empowerment, the same learner may lack the awareness and self-motivation that would lead to autonomous learning. In other words, an individual may not be an autonomous learner, or demonstrate the qualities of learner autonomy in all situations but may engage in autonomous learning given the right context. Therefore, it makes sense to assess whether the learning context encourages the learner to become engaged in actions or behaviour that could be classified as autonomous learning. In order to do this, it is necessary to identify activities that autonomous learners might engage in, such as identifying gaps in knowledge, initiating activities that might fill that gap, and self-monitoring success in closing the gap. With such a framework, a learning context can be investigated as to its strength in promoting autonomous learning.

Reinders (2010), based on other researchers (Dewey, 1933; Knowles, 1975; Reinders & Lewis, 2005; Winne & Hadwin, 1998), developed a framework of eight activities that should be present if a context was to be considered an autonomous learning context:

- identifying needs,
- setting goals,
- planning learning,
- selecting resources,
- selecting learning strategies,
- practice,
- monitoring progress,
- assessment and revision.

In order to participate in the activities that make up an autonomous learning event, learners must reflect on various aspects of their actions. Bringing these two aspects together – the framework of an autonomous learning context, and the participation of the learners in the context as captured in their reflections – it was possible to answer the second question in this dissertation research: *Did the use of an ePortfolio learning module implemented in a university EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility?* In order to find out how learners engaged with the context, the reflections they produced as they progressed through the series of activities that made up the learning module were investigated. Therefore, it is important at this juncture to examine the notion of reflection, which, according to many theorists, (see, Benson, 2006; Holec, 1979; Little, 2020; Little & Dam, 1998; Schön, 1982) is at the heart of autonomy and learning. According to Little (2020),

learning can only be done by learners themselves; this being the case, learning will be more efficient when learners reflect critically on the goals, methods, processes, and outcomes of their learning; and it is through such critical reflection that learners empower themselves to transcend the limitations of their immediate learning environment (p. 24).

The next section will explore the notion of reflection and the part it plays in fostering autonomy in language learning.

### **2.2.2.2 Reflection: the heart of autonomy**

#### ***2.2.2.2.1 The concept of reflection: an introduction***

Holec (1979), in *Autonomy and Foreign Language Learning*, describes the “new role of the learner,” who “must determine his own objectives and contents by making choices based on personal criteria” (p. 21). This new role clearly requires learners to reflect on what they know and what they wish to acquire, engaging learners in ‘thoughtful reflection,’ as Dewey (1896,

1933) termed it. Dewey defined reflective practice as “the active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it” (Dewey, 1910, p. 6), suggesting that this type of thinking did not come naturally, but had to be taught. Building on Dewey, Schön (1982) investigated the role of reflection within the context of the professional practitioner and elaborated a theory that highlighted the need for principled reflection on any professional activity, including teaching and learning.

Although Schön (1983) was the first to coin the phrase *reflection-in-action* to describe the process of learning by and through considered examination of experience, it was Dewey who, in a seminal article published in the July 1896 issue of *The Psychological Review*, *The Reflex Arc Concept in Psychology*, first extended the notion of the “reflex arc” to include the experience of the organism (which, in the case of psychology, is the human). Since then, the concept of reflective practice and the reflective practitioner has become “a cornerstone of pedagogy in professional preparation in education, health science, management, and other fields, as well as a key concept in life-long learning and professional development” (Nelson, 2012, p. 203), and continues to hold a central position in education (Mann & Walsh, 2020). The following sections trace the concept of reflection, considered the core skill of autonomous learning, from Dewey to its present status as an important 21<sup>st</sup> century learning skill.

#### ***2.2.2.2.2 An innovative break with tradition: Dewey***

In 1896, when Dewey wrote his article for *the Psychological Review*, the prevailing understanding of learning at the time was “stimulus-response,” first developed by Ivan Pavlov, and later used in psychology by J. B. Watson and B. F. Skinner (*What is stimulus-response theory in psychology?* 2016). This theory postulated that learning was a simple binary process of a stimulus creating a specific response. Dewey (1896) argued that the theory of this simple

binary process, or the reflex arc was, in fact, defective because of its failure to see that the arc “is virtually a circuit, a continual reconstitution” of the experience (p. 360). “It is that experience mediated. What we have is a circuit, not an arc or broken segment of a circle” (p. 363). Dewey (1896) stated that:

the fact is that stimulus and response are not distinctions of existence, but teleological distinctions, that is, distinctions of function, or part, played with reference to reaching or maintaining an end (p. 365).

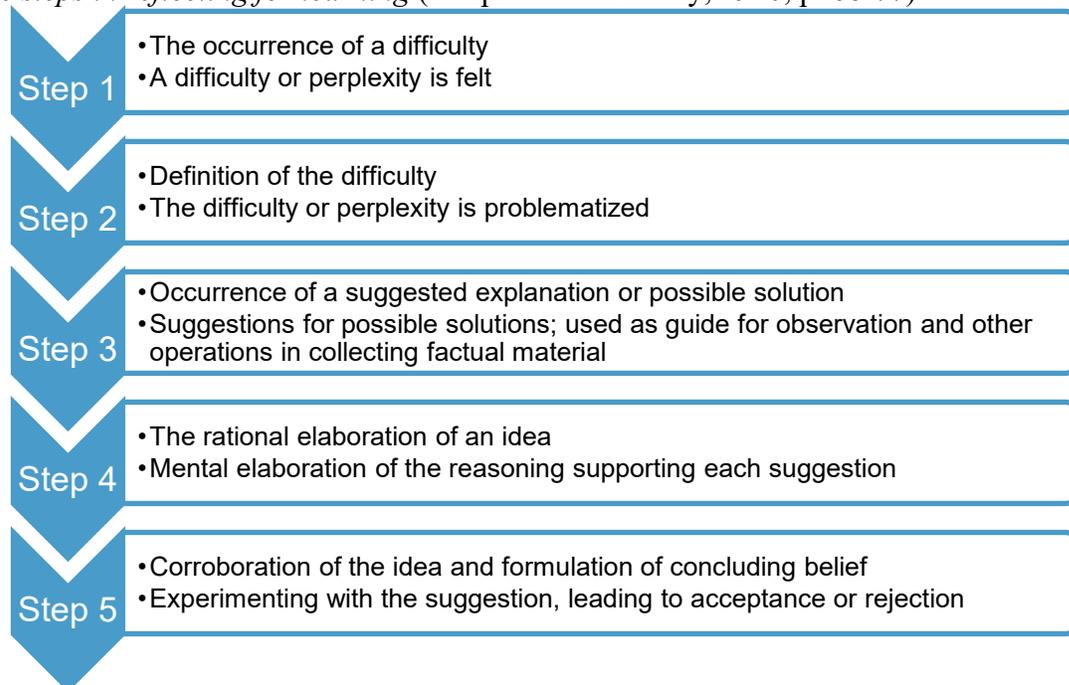
He argued that using the theory of the reflex arc to analyze activity “leaves us nothing but a series of jerks, the origin of each jerk to be sought outside the process of experience itself, in either an external pressure of ‘environment,’ or else in an unaccountable spontaneous variation from within the ‘soul’ or the ‘organism’” (p360). He suggested that between the stimulus and the response, there is an integration of knowledge, or learning by the organism. “Sensory stimulus and motor response are always inside a coordination and have their significance purely from the part played in maintaining or reconstituting” the completed (or coordinated) activity. Dewey indicated that this idea of learning or integration of knowledge into experience was first formulated by Plato, according to whom, “sensation is an ambiguous dweller on the border land of soul and body” (p. 365). In other words, the stimulus or sensation is observed and interpreted by the individual (the soul) who then directs the body’s response.

Thus, Dewey postulated that this observation and interpretation is the heart of learning. For Dewey, clearly, learning is not simply an action-reaction process, but is, in fact, the interpretation of the organism, mediated by such factors as the context of the event, and the learner’s expectations and previous experience of other similar events. He identified this observation and interpretation as the basis of reflective thinking, and he contrasted it with

unsystematic or unreflective thinking. He argued that unreflective thinking may jump to conclusions without observing and interpreting. It may not be evidence-based, or it may be based on false or inaccurate assumptions and beliefs or beliefs that conform to authority or tradition. In addition, the notions of sequence and consequence are essential to reflective thinking – that is, thinking is reflective if it follows a logical sequence, and the consequences of the decision (imagined or actual) are taken into consideration (Villi, 1997). Dewey identified a process of reflection that incorporated all facets of the experience, including the expectations and previous experience of the learner, the purpose of the activity within a given context, and the possible outcomes of any action. In his book, *How We Think*, published in 1910, he described five distinct steps in engaging in reflection for learning. Figure 2.4 summarizes the Deweyan steps in reflective engagement for learning.

Figure 2.4

*Five steps in reflecting for learning* (Adapted from Dewey, 1910, p. 68-77)



In *How We Think*, Dewey (1910) continued to elaborate his theory of learning. He did not consider learning as passive; students were not simply vessels to be filled up with knowledge

selected by a teacher (transmission of knowledge). He believed learning was based on experience - the learner interacted with the learning environment, interpreting sensory perception, and directing motor activity - and this experience had a major effect on subsequent learning (transformation of knowledge). In other words, the learner was central to the educative process and key to the effectiveness of teaching. He underlined the effect of the learning environment, emphasizing that training the mind was not a generalized, vague process; it took place within the context of an activity with clearly established goals. He presented a constructionist view of learning as a process of building a system of beliefs (Dewey, 1910), where the “ground or basis for a belief is deliberately sought and its adequacy to support the belief examined” (p. 1-2). As previously stated, he defined reflective thought as an “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends, ... a conscious and voluntary effort to establish belief upon a firm basis of reasons” (p. 6). He identified learning as an iterative and active process, where learners, when faced with new experiences, constantly re-examined and adjusted belief systems to integrate new knowledge, highlighting learning as an “internalized and individual phenomenon... [consisting of] multiple contextual elements” (Nelson, 2012, p. 206). He believed that reflective habits of thinking did not come naturally; they needed to be taught. The fundamental goal of education, according to Dewey (1910) was to develop

deep-seated and effective habits of discriminating tested beliefs from mere assertions, guesses, and opinions; to develop lively, sincere, and open-minded preference for conclusions that are properly grounded, and to ingrain into the individual’s working habits methods of inquiry and reasoning appropriate to the various problems that present themselves (p. 28).

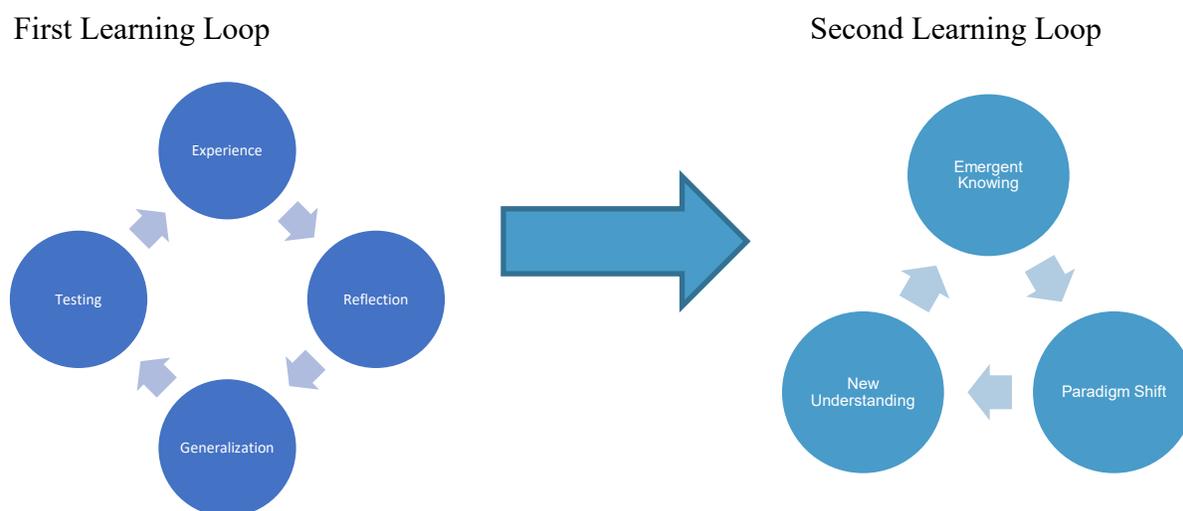
Dewey, as one of the most influential thinkers in education during the past century, formed the foundation for understanding reflective thinking in education. However, it was not until forty years later that researchers became interested once again in the role of reflection through the work of Donald Schön.

### ***2.2.2.2.3 Reinvigoration of the role of reflection in learning: Schön, Argyris, and Valli***

Schön examined Dewey's theory of learning and inquiry in his doctoral dissertation published in 1955. Building on Dewey, Schön investigated the role of reflection within the context of the professional practitioner, and, collaborating with Chris Argyris, published *Theory in Practice: Increasing Professional Effectiveness* (Argyris & Schön, 1974). They proposed a Double Loop learning model that incorporated basic problem solving in the first loop, and deeper reflection resulting in a paradigm shift for the learner in the second loop (see Figure 2.5).

**Figure 2.5**

*Double Loop Learning Model* (Adapted from Argyris & Schön, 1974)



In this model, the second learning loop encompassed examination of taken-for-granted knowledge, or tacit knowing, which could include unexamined beliefs and assumptions, and could result in a fundamental shift in perspective (Brooke, 2014; Nelson, 2012).

According to Schön (1982, 1987), with the advent of the ‘professional knowledge industry,’ the dominant epistemology of practice in education had been technical rationality, or the solving of problems through the application of scientific theory and technique. Universities and colleges had responded to the perceived need for professional competence by focusing on producing rigorous professional practitioners who could “solve well-formed instrumental problems by applying theory and technique derived from systematic, preferably scientific, knowledge” (Schön, 1987, pp.3-4). However, over the past 50 years, many scientists and philosophers (Bakhtin, 1981; Habermas, 1972; Kuhn, 1962; Rorty, 1979, to name a few) including Schön, critiqued the technical rationality model and the basic assumptions of social and scientific foundational knowledge, including pointing out the limitations of instrumental problem solving (Kinsella, 2007).

Schön’s (1982) critique of technical rationality centered on his acknowledgement of the significance of experience. He suggested that the model of technical rationality did not fully explain practical competence of the practitioner when faced with novel situations. He termed this practical competence *tacit knowing-in-action*, and he proposed that the fact that this competence is tacit, not easily described by the practitioner, makes this knowledge inaccessible to the novice/learner. He echoed Dewey’s (1904/1964) belief that teacher training was generally focused on the technical goals of developing skills and techniques – it focused on the how, but not the why. New teachers could model experienced teachers’ methods, but they could not explain the philosophy that informed these experienced teachers’ decision-making in their day-

to-day dealing with issues in their practices. To address this, Schön (1982) included the ideas of intuition and value judgement in his theory, arguing that what was needed was “an epistemology of practice implicit in the artistic, intuitive processes which some practitioners ... bring to situations of uncertainty, instability, uniqueness, and value conflict” (p.49). The epistemology that Schön suggested is *reflection-in-action* or *reflection-in-practice*. Schön did not discard the research-based professional knowledge that was the underpinning of technical rationality; instead, he suggested that it needed to be expanded to include principled reflection on professional activity.

According to Schön, “professional education should be redesigned to combine the teaching of applied science with the coaching in the artistry of reflection-in-action” (xii, 1987). Over the next decade researchers examined the “artistry of reflection on- and in-action.” Valli (1997), after reviewing the literature and surveying the use of reflection in teacher education programs, concluded that there were five levels of reflection and published these levels in the form of a table in her article *Listening to Other Voices: A Description of Teacher Reflection in the United States*. Table 2.3 provides a list of the five orientations as they relate to the profession of teaching, but they can also be applied to the tertiary level of learning. They progress from technical reflection, which basically focuses on the techniques of teaching and learning, through reflection on personal performance, to performance in relation to the curriculum, the classroom, and the personal relationship with others, and finally to the social and moral dimensions of the institution.

Table 2.3

*Hierarchy of Reflection (Valli, 1997, p. 75).*

| Type                               | Content for Reflection  | Quality of Reflection   |
|------------------------------------|---|---|
| <b>Technical reflection</b>        | General instruction and management behaviours that are based on research on teaching  | Matching one's own performance to external guidelines   |
| <b>Reflection-in and on-action</b> | One's own personal teaching performance   | Basing decisions on one's own unique situation  |
| <b>Deliberate reflection</b>       | A whole range of teaching concerns including students, the curriculum, instructional strategies and the rules and organization of the classroom | Weighing competing viewpoints and research findings   |
| <b>Personalistic reflection</b>    | One's own personal growth and relationships with students   | Listening to and trusting one's own inner voice and the voices of others  |
| <b>Critical reflection</b>         | The social, moral, and political dimensions of schooling  | Judging the goals and purposes of schooling in the light of ethical criteria such as social justice and equality of opportunity |

Valli (1997) suggested that, although most education programs focused on the first level of reflection, technical reflection, they should include all five orientations, because each reflection draws out different insights into practice. Valli presented the orientations as a hierarchy because they could build on each other. For example, an understanding of technical knowledge may be needed for deliberative reflection. Other researchers (e.g., Spalding & Wilson, 2002) suggested that they may be used as a typology because each orientation could be equally valuable depending on the purpose of the reflection.

Although Valli's list was specifically for the teacher practitioner, it is equally applicable to the learner. In promoting reflection and autonomy in the ePortfolio learning module that was the

focus of this study, based on teacher feedback and their own observations, participants were asked to reflect on the following:

- How well they followed the written and oral instructions; if their performance matched the external guidelines (hence, Technical reflection). This is essential because many learners engage in assignments without clearly understanding the instructions.
- How well they were able to manage course requirements to ensure optimal learning (hence, Reflection-in and on-action).
- How well they were able to set goals and accomplish these goals, according to their own observation of improvement (hence, Personalistic reflection).
- If they were able to select among the available resources those that best suited their beliefs and abilities (hence, Deliberate reflection).
- If they believed that the learning module promoted their L2 learning objectives. Did they believe that the learning module was a valuable use of their time (and money)? (hence, Critical reflection).

By engaging in these different types of reflections, learners were scaffolded as they began to take control of their learning. Ultimately, the goal was for these EAP learners to transfer these techniques to other academic contexts.

Looking at the work of Dewey and Schön, clear parallels can be drawn between the position of reflection in Dewey's theory of learning and in Schön's model of professional competence. Both theorists suggest an epistemological view that breaks with traditional practice. They attempt to overcome the "dualism of thought and action, research and practice, science and common sense" (Schön, 1992, p. 121) by placing the individual at the center of knowledge generation. They believed that the practitioner or learner was an agent within the process of knowledge generation or sense-making. As the practitioner/learner interacts with the situation, encompassing previous experience and insights, he or she changes and shapes it, creating

meaning and thus motivating action. In addition, both Dewey and Schön suggested that the relevant institutions discounted the experience of the individual as part of the learning environment. According to both theorists, it is the individual's sense of a problematic or troublesome event that is the catalyst for inquiry. For example, for an L2 learner, a troublesome event may be that of not being understood during an oral presentation or when asking a question in class. These events are perplexing, confused or confusing “problematic situations characterized by uncertainty, disorder, and indeterminacy” (Schön, 1983, p.15-16). They are not easily resolved using straight-forward scientific methods. These moments of confusion represent “indeterminate zones of practice” (Schön, 1987) and are most responsive to Dewey's reflective thought or Schön's reflection-in/on-practice.

The importance of the work of Schön, Argyris, and Valli is that it began to blur the lines between teaching and learning and challenged the adopted roles of power within the classroom. These theorists translated Dewey's theory of learning into a real-world practice that could be utilized by learners in the development of reflective practice. This reflective practice is then a cornerstone, scaffolding learners as they become more autonomous in their quest for knowledge, thus freeing them from the conventional restraints of the institution.

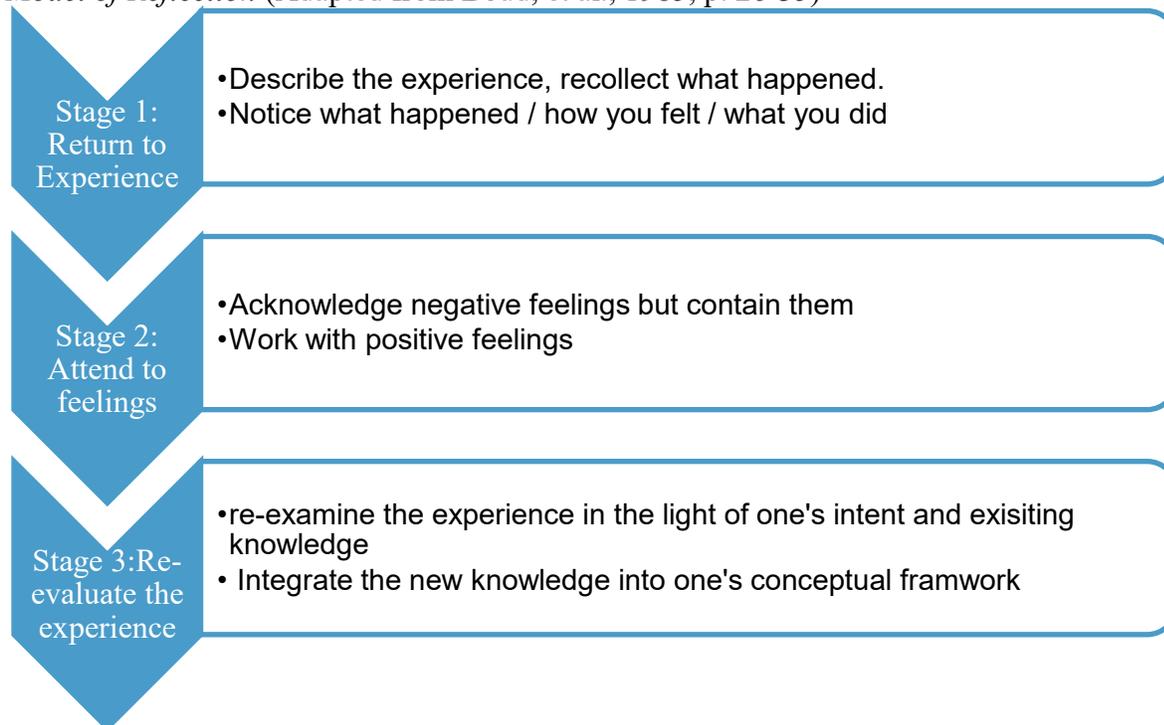
#### ***2.2.2.2.4 Reflection goes mainstream: Boud and Walker***

During the 70s and 80s, Argyris and Schön developed Dewey's insights in such a way that reflective learning could be useful to adult practitioners and organizations. This focus on how adults learn generated a new field of interest, *adult education*. In 1968, the United States government commissioned a task force, *the Council on the Continuing Education Unit*, to “gather academic, business and education experts from around the country to define and promote the use of a single consistent unit of measurement for continuing education” (NECA, 2020,

<http://www.employmentcounseling.org/continuing-education-committee.html> ). At the same time, the Council of Europe Modern Language Project was focusing on how adults learn languages, which resulted in the publication of Holec's (1979) *Autonomy and Foreign Language Learning*. In this volume, Holec describes the "new role of the learner...[who] must determine his own objectives and contents by making choices based on personal criteria" (p. 21). Based on Dewey, Holec, and Schön, David Boud an Australian working in the field of adult education, developed a model of reflection, with the purpose of guiding learners in reflecting on their experience in professional contexts; that is operationalizing it as an activity that encouraged and enabled learners to "recapture their experience, think about it, mull it over and evaluate it" (Boud *et al.*,1985, p.19). Boud, Keogh and Walker (1985) revised Dewey's five steps of reflection (See Section 2.4.2) for learning into three stages (Figure 2.6) which encouraged the learner to be "self-organized," or as Holec put it, "self-directed," alluding to the relationship of reflection to the notion of autonomy in learning.

**Figure 2.6**

*Model of Reflection* (Adapted from Boud, et al., 1985, p. 26-35)



Boud argued that reflection was necessary for learning; it consisted of “those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations” (Boud, *et al.*, 1985, p. 19). Through reflection, learners examine their experiences and construct their own meanings within the specific context (Boud, 1999). Although the model was useful in conceptualizing the activity of reflection, it became clear that a hands-on tool was needed to allow learners to examine their feelings as well as assess the situation within the formal context of learning – thus the reflective journal was introduced as central to this activity. In Boud *et al.*’s book (1985), *Reflection: Turning Experience into Learning*, Walker (1985) published a chapter entitled *Writing and Reflection*, in which he explored the rationale for using journal writing to develop reflective thought. He used the term ‘portfolio’ to describe his method, defining it as “a work-book, a forum within which one works

seriously with the experiences of learning. It fosters that important and essential counterpart to experience: reflection” (p. 53). Walker’s notion of creating a reflective portfolio was to gain wider acceptance during the 90s. In that chapter, Walker (1985) presented a template for how portfolio journal writing might be integrated into teaching curricula, listing the goals for such writing as follows:

1. To provide a record of the significant learning experiences that have taken place;
2. To help the participant come into touch and keep in touch with the self-development process that is taking place for them;
3. To provide the participants with an opportunity to express, in a personal and dynamic way, their self-development;
4. To foster a creative interaction between:
  - a. the participant and the self-development process that is taking place
  - b. the participant and other participants who are also in the process of self-development
  - c. the participant and the facilitator whose role is to foster such self-development;
5. To provide a means of reflection on one’s commitment to and involvement in the program.

(Walker, 1985, p.54)

These same goals are just as relevant now, in both paper-based and electronic portfolios, and provide a useful framework for introducing the activity to learners in the modern classroom. In fact, these same goals were part of the introductory information in the ePortfolio learning module that was the focus of this research.

Over the past decades, reflective journal writing has become an established part of many pre-service preparation courses and programs where there is an integration of field training and academic work (Brooke, 2014). There is a plethora of online advice and suggestions for how to write a reflective journal or essay in many different contexts, including teaching, nursing, and social work. Entering the term *reflective journal template* into Google produces an astonishing

6,920,000 results. The activity was so popular that by 1998, Boud was concerned about how reflective writing was being used in professional training, commenting that with the growing interest in using reflective practice in courses came “the challenge of incorporating ideas about reflection, which in some cases are only partially understood, into teaching contexts which are not conducive to the questioning of experience” (Boud and Walker, 1998, p.192). Boud and Walker (1998) go on to point out how the use of reflection had been corrupted:

While we are sympathetic to the focus on learning through experience in reflective practice and are committed to the inclusion of reflective processes and theorizing about reflection within professional courses, we believe that there are now many examples of poor educational practice being implemented under the guise and rhetoric of reflection (p. 192).

They were particularly concerned about what they called “recipe following,” when students were required to “reflect on demand” using a prescribed method or set of questions, and the issue of assessment, when students were asked to explore misconceptions in situations where they would be assessed on mastery of subject matter (p.194). These issues and others have continued to plague the use of reflection where context is ignored, and the activity has been reduced to standard practice.

It is worth noting that in applying these principles to the ePortfolio learning module, which is the focus of this study, the same concerns regarding ‘recipe following’ surfaced. When I first introduced the reflective ePortfolio, I deliberately asked open ended questions and gave little guidance as to how learners should respond. However, it soon became clear that some learners did not take the activity seriously and gave similar answers for each of the required entries. In subsequent classes, I experimented with different prompts to encourage reflection, sometimes

listing questions for thought, and sometimes awarding points for types of answers. In each class, there were always those who did the perfunctory amount of work, expending as little effort as possible, and those who recognize the opportunity for self-development and ran with it. According to Boud, et al., (1985) “Learners are having to cope with considerable amount of new information, they are facing personal demands and the situation forces them into active involvement whether they like it or not” (p. 11). I would suggest that if learners do not like it, they find ways of avoiding it, and we, as teachers, are always actively searching for new techniques to engage our students in reflective thinking in the pursuit of fostering the autonomous learner. Some techniques are successful, and some are not; some techniques are successful with some students and not with others. Although educators may see learner autonomy as a desired outcome of education, promoting a certain freedom from the constraints of the institution and maturity of thought, not everyone is interested in gaining this freedom, and some learners may consider reflection to be an irresponsible waste of valuable academic time.

#### ***2.2.2.2.5 Reflection is politicized: Freire and Habermas***

The 70s and 80s saw a focus on the emancipatory aspect of reflective thought. According to Dewey (1933), reflective thought monitors the logic of assumptions and beliefs, and evaluates the consequences of a proposed course of action. Promoting reflective thought is important because

it emancipates us from merely impulsive and merely routine activity . . . enables us to direct our activities with foresight and to plan according to ends-in-view, or purposes of which we are aware . . . to act in deliberate and intentional fashion . . . to know *what we are about* when we act. *It converts action that is merely appetitive, blind, and impulsive into intelligent action.* (Dewey, 1933, p. 17).

Paulo Freire, one of the most influential proponents of autonomy, like Dewey, also saw education as an important mechanism in shaping habits of the mind. According to Freire (1970), education could be used either for emancipation or oppression, and at the core of this education was reflection. Freire believed that for education to achieve its purpose of social justice, reflection on the part of both the teachers and the students was required.

As we attempt to analyze dialogue as a human phenomenon, we discover something which is the essence of dialogue itself: the word. But the word is more than just an instrument which makes dialogue possible; accordingly, we must seek its constitutive elements. Within the word we find two dimensions, reflection and action, in such radical interaction that if one is sacrificed—even in part—the other immediately suffers. There is no true word that is not at the same time a praxis. Thus, to speak a true word is to transform the world (Freire, 1970, p. 75).

In Freire's theoretical viewpoint, it is possible to see the shadows of Dewey's steps of reflective thought, Schön's reflection in/on action, and Boud's three stage model of reflection resulting in transformation of beliefs and assumptions. In the 1980s, the ideas of these thinkers and others came together under the heading Critical Pedagogy, which stated that the purpose of education was transformative; that is, "to create systems or organizations ... to resist oppressive power relations in the classroom to ensure that education achieved a transformation in the consciousness of the learner so that a better society can be created" (Nelson, 2012, p. 208). In this politicized view, language teaching and learning is not neutral, but instead used as a method of controlling knowledge (Benson, 1997) and thus autonomy is linked to "empowerment" (Benson & Voller, 1997, p.7). Freire considered autonomy as a principal goal of critical

pedagogies, arguing that it would emancipate learners, allowing them to engage in life-long, self-directed learning (Nelson, 2012).

Along with the development of Critical Pedagogy there was a resurgence of interest in an approach to research, Action Research and Participatory Action Research (Carr & Kemmis, 1982; Nelson, 2012). The term was first coined by Kurt Lewin (1946) in his paper *Action Research and Minority Problems* and has been summarized as an approach that “combines theory and practice (and researchers and practitioners) through change and reflection in an immediate problematic situation within a mutually acceptable ethical framework” (Avison, Lau, Myers & Nielsen, 1999, p. 95).

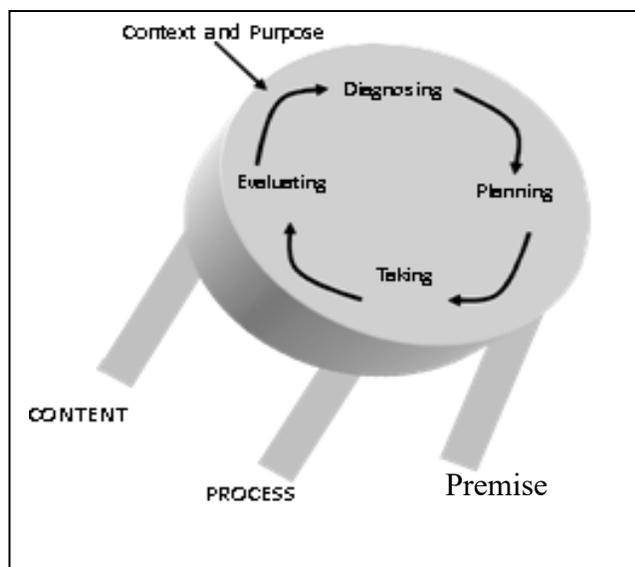
According to Brooke (2014), basing his observations on the writings of such theorists as Argyris and Schön, action research is a method of gathering data:

a systematic process of planning, action, and reflection on action creating a complex spiral of exploratory change. For this to occur, there is a constant interplay between the gathering of evidence about practice and reflection on this data, as the researcher seeks proof for planned change in the research design (p.52).

Coghlan and Brannick (2005) call this process of reflecting on inquiry ‘meta-learning,’ and suggest that it consist of three types of critical reflection: content; process; and premise. They then indicate where these types of reflections fit into the process of action research, creating a meta-cycle of inquiry (see Figure 2.7).

**Figure 2.7**

*Meta-cycle of Inquiry* (Adapted from Coghlan and Brannick, 2005)



Although the study that is the focus of this research was not undertaken specifically as action research, the development of the ePortfolio learning module during the first years of use had some similarities to this type of research. Kemmis and McTaggart (1988) defined action research as

a form of collaborative self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which these practices are carried out (p. 1).

The justification for developing the ePortfolio learning module was the fact that many of the ESLA learners were graduating from advanced English classes, still unable to speak English clearly enough to participate easily in class discussion or deliver presentations. This caused them anxiety and I believed that it was, in fact, an injustice on the part of the program that their needs were not being addressed. I conceived of the ePortfolio learning module as an add-on in a course

that was already overloaded with learning outcomes – a method whereby with a little reflection on the part of the learners and some initial work on the part of the teacher (me), this need could be addressed. Together, the learners and I, quickly found that it was more relevant and required more attention than I initially thought. Over the first years, I did not bring together “action and reflection, theory and practice, in participation with others” (Reason & Bradbury, 2008, p. 4) in a principled manner; however, I was, to a certain extent engaged in action research. With regard to this present research, I am looking backwards to examine how well the module is achieving its goals. This research may result in changes to the module, but not quite in the same way as it would have, had I been more theoretically aware at the beginning.

Another important theorist in the Critical Pedagogy movement is Jurgen Habermas. From 1983 to 1993 Habermas was the director of the University of Frankfurt Institute for Social Research, which was an important centre for those involved in the development of Critical Pedagogy. Thus, his writings had a great impact on Critical Pedagogy theory and the educative institutions and programs that were set up during that time. Habermas (1972) argued that emancipation from political and social domination is a fundamental part of humanity and “reflection is a process which frees the human mind in its purposeful intention” (cited in O’Hanlon, 1994, p. 283). According to Habermas, the importance of reflection is that it is used to question experience, which leads to emancipation through the critical examination of assumptions and beliefs, and this results in a new understanding. Thus emancipation, empowerment and autonomy are all part of critical approaches to language pedagogy which tend to emphasize issues of power (Benson, 1997).

Influenced by the work of both Freire and Habermas, Pennycook (1997) argued for “a more socially, culturally and politically engaged version of language education than that commonly

assumed by what [he] see[s] as the mainstream version of learner autonomy.” He suggested that language teachers should “teach language in a way the opens up cultural alternatives for ... students, that allows them to become authors of at least part of their worlds” (p. 49). However, it is not always clear to language teachers how this is to be accomplished. For example, Benson (1997) suggested a number of areas of activity through which autonomy could be promoted in language classes, including “collaborative group work and collective decision making; exploration of societal and personal learning goals; control over management of learning” (p. 33). However, to the language teacher, it is not clear how to develop the language necessary to take on these challenges. As a result, some theorists (e.g., Allford & Pachler, 2007) considered these politicized versions of reflection and autonomy as radical approaches where the emphasis is on the learner’s right to become autonomous but not necessarily the ability to assume the responsibility. Beginning in the 1990s and into the 21<sup>st</sup> century, there has been a more measured approach to the value of fostering autonomy “as a means to the end of more effective language learning” (Benson & Voller, 1997, p. 13).

#### ***2.2.2.2.6 Reflection in the 21st century: autonomy - uses and abuses***

The focus on learner autonomy, which began with the Council of Europe’s Modern Language Project in the 70s, has continued into the present. When Holec (1981) published his seminal report, which defined learner autonomy and laid out the goals and methods of autonomous language teaching, he argued that learners did not develop the ability to self-direct their learning on their own; they had to be guided.

In a general way teaching coming under the heading of action based on autonomy should no longer be looked upon as ‘*producing*’ learning but as ‘*facilitating*’ it. It must take

place in the shape of a set of procedures that help the learner to learn, not make him learn, and which are used by the learner rather than '*mould*' him (p. 23).

As mentioned, Holec did not specifically discuss reflective thought in developing autonomy, but there are clear parallels with Dewey's theory of learning, theories of reflective practice as discussed by Schön, Boud and Walker, and the purpose of education as proposed by Freire and Habermas. For example, the purpose of both autonomy and reflective thought is emancipation through understanding one's beliefs and assumptions, and both autonomy and reflective thought must be taught; they do not come naturally but need support and guidance as the habits of critical and reflective thinking are developed. In fact, according to Reinders and White (2011) guidance and feedback are necessary to navigate information, even more so in this age of the internet, as "unrestricted access to which can inhibit learners from taking more responsibility and thus developing themselves as autonomous learners" (p.1). They go on to argue that although, in general, researchers have accepted Holec's (1981) definition of autonomy, there is some confusion as to how to unpack it. Does this definition include motivation, metacognitive awareness, and affect? And how should this definition be operationalized and measured? How can educators assess the impact of instructional interventions on learners' sense of autonomy and learning outcomes?

With regard to developing speech comprehensibility, as with other areas of language learning, students are often unsure how to proceed if given complete control over their own language learning. However, there is some discussion as to what methods should be used to support their learning. Pennycook (1997) argued that autonomy is not something teachers can give their students, but he also suggested that strategy training and self-access work may be reductionist and insufficient, or may even encourage the use of established methods, materials,

and techniques. In radical approaches, where the class becomes totally student-centered and the teacher acts as a facilitator, there is little attention given to exactly how educators should support the development of the skills necessary to work autonomously, or how to address the needs of a student who consciously makes the choice to come to a teacher to learn. Thus, some researchers, (e.g., Allford & Pachler, 2007; Pennycook, 1997; Reinders & White, 2011), suggested a more gradualist position where autonomous learning is identified as a long-term goal to be developed over time with scaffolding and guidance from the teacher for both technical and psychological skills and strategies.

In the ePortfolio learning module that was the focus of this study, I recognized that not all of my students were at the same level in the acceptance of their responsibility in the learning process and their quest for autonomous learning. Some students needed and benefited from more guidance, practice, and encouragement than others. In other words, this study took a *gradualist approach*, with the long-term objective of fostering autonomy in language learning by offering students opportunities to engage with strategies and tools that might assist in autonomous learning and allowing them to select the tools and strategies that best suited their needs as they perceived them. With regard to the definition of autonomy, this study drew on Benson's (1997) technical version of autonomy, which emphasizes training to equip students with learning skills and strategies, and the psychological version, which fosters the attitudes and abilities that may allow learners to build confidence and take control of their learning. It also drew to a certain extent on Benson's political version, as it gave students some control of the methods and content of their learning. (See above, Benson's three versions of autonomy: Section 2.3.2).

In the last decade, there has been a redefining of the skills learners need to be successful in this information age. According to Dede (2009), the learning skills needed in the 21<sup>st</sup> century are

quite different from those required previously because of the emergence of information and communications technologies. As computers take over more of the routine cognitive work and manual labour, more workers are expected to do jobs that require expert thinking and complex communication. Although many of these skills have always been valuable, access to sophisticated information and communication technologies is changing the ways these skills are applied in the 21<sup>st</sup> century. Collaboration, for example, has always been important, but new technologies have made collaboration on a global scale possible. Complex communication is needed to work with teams that may be composed of individuals from many different cultural backgrounds and situated across the world. Now more than ever there is an emphasis on the ability to think logically, to engage in principled reflection. *Partnership for 21<sup>st</sup> Century Skills* states that:

as much as students need to learn academic content, they also need to know how to keep learning — and make effective and innovative use of what they know — throughout their lives. Learning and thinking skills are comprised of:

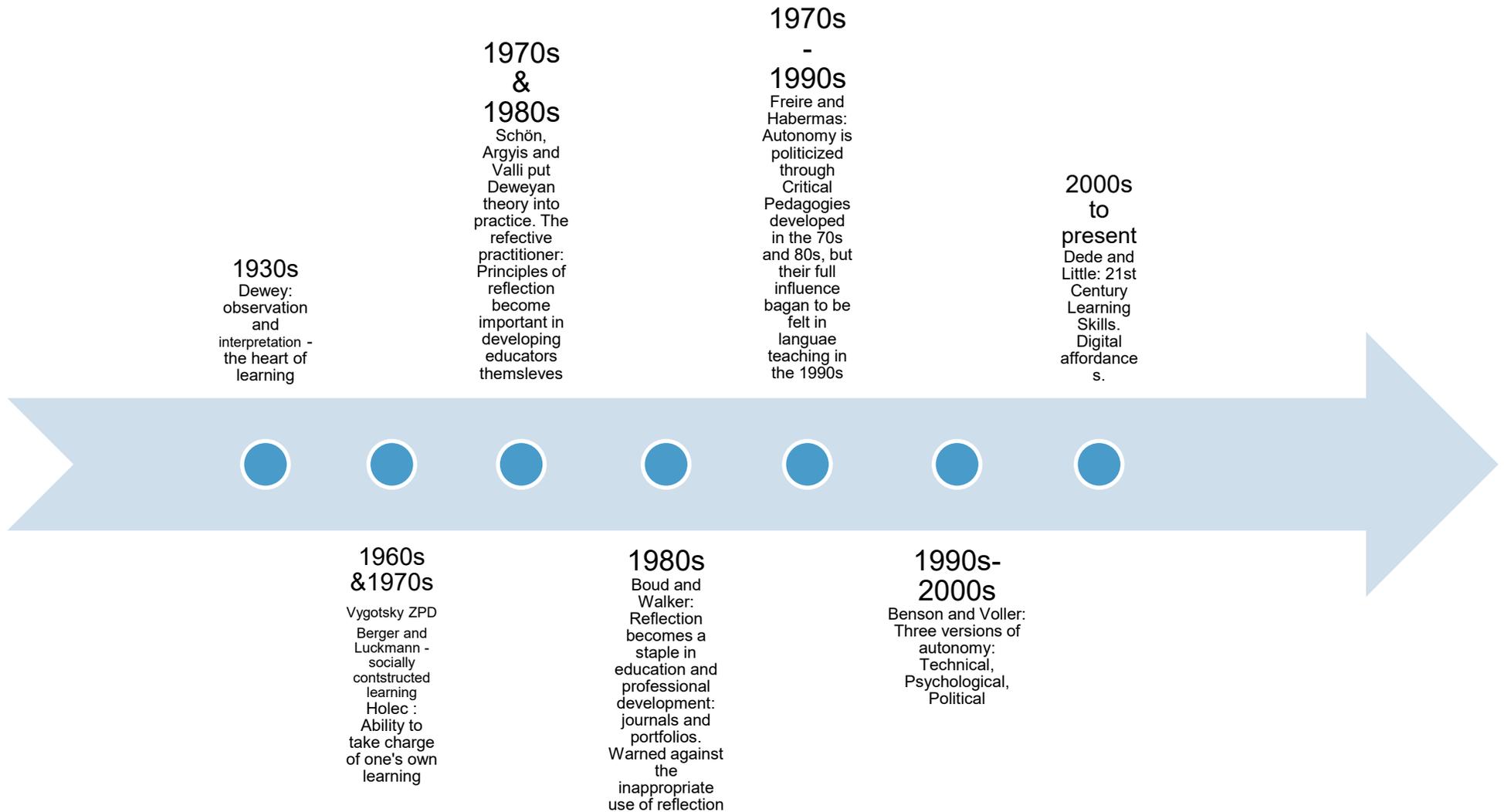
- Critical-thinking and problem-solving skills
- Communication skills
- Creativity and innovation skills
- Collaboration skills
- Contextual learning skills
- Information and media literacy skills.

(<http://www.21stcenturyskills.org>)

Educational institutions are incorporating a variety of methods to help students master the skills they will need to navigate the professional landscape in the coming years. Many universities are promoting virtual learning environments as a method of expanding their students' horizons and teaching the technical skills they will need in the future. One of these environments is the electronic portfolio.

What began as a non-traditional approach to education has become mainstream (Mann & Walsh, 2020). The term *reflection* is now part of every good educator's vocabulary however, the definition of reflective practice is often "elusive, general, and vague" (Walsh & Mann, 2020, p. 5). Students and professionals are regularly expected to reflect on various aspects of their learning and practice. Sometimes there are guiding questions, or models offered of what the reflections should encompass. Sometimes the reflections are assessed for a small percentage of the course grade, sometimes they compose a large portion of the grade awarded in a program, and sometimes they are required as part of renewing a license. The statement that Boud and Walker (1998) made twenty years ago is just as relevant now as it was then. They said, "we believe that there are now many examples of poor educational practice being implemented under the guise and rhetoric of reflection" (p. 192). Figure 2.8 presents a brief timeline of the development of the construct of reflection and learner autonomy, both philosophically and politically.

**Figure 2.8**  
*The Development of the Philosophy and Politics of Learner Autonomy: A Brief Timeline*



Boud and Walker (1998) went on to argue that reflection does not always produce the desired outcome – if the reflective activities are inadequately explained or inappropriate for the context, they can become more of an obstacle to learning than a support. “Without focus on conceptual frameworks, learning outcomes and implications, reflection from learners can become self-referential, inward looking and uncritical... There are no reflective activities guaranteed to lead to learning, and conversely there are no learning activities guaranteed to lead to reflection” (p. 193). They observe that one of the main issues in developing reflective practice is the amount of guidance that is appropriate for any given activity. “There is inevitably tension between guidance which leads to the problems of recipe-following... and a lack of structure which can lead to a loss of focus” (p. 193). This was clearly highlighted in the ePortfolio learning model under investigation as there was a constant balancing act between creating prompts and feedback techniques that promoted reflective thinking or simply resulted in short answers devoid of any obvious self-development on the part of the learner.

The idea of learner autonomy is attractive because it suggests that with some guidance and access to the correct tools, learners can develop the necessary skills to engage in and improve learning on their own, alleviating pressure on classroom teachers. Little (2009) states that because autonomous learners are “motivated and reflective,” their learning is “efficient and effective” (p. 3). However, research indicates that learner autonomy is by no means an expected outcome of modern educational systems, even though it is often a stated goal of national curricula (Little, 2009). Little goes on to explain that in the context of formal learning, teaching is assumed to be “the transmitting of a fixed body of knowledge to learners in a succession of monologues (from teacher or textbook)” (p. 4), which results in learner alienation rather than the reflective engaged learner teachers are hoping to foster. According to Deci (1995), learners are

alienated when they are controlled; if learners are to be motivated to interact with their environment, they must be autonomous. In formal language learning, where the goal is communicative proficiency, the environment is conducive to the development of learner autonomy with guidance from teachers as they help learners to identify their learning needs and work to find ways to meet these needs. Teachers must “initiate, model and support the various forms of discourse required for learner involvement, learner reflection and appropriate target language use” (Little, 2009, p.6). As Walker (1985) suggested, the use of a portfolio (paper-based or electronic) can deepen and extend the classroom language learning experiences and at the same time support the development of reflection and learner autonomy necessary if the individual is going to continue the activity of language learning beyond the formal ESL/EAP classroom. Thus, reflection and autonomous learning are aligned with the use of portfolios in educational contexts, and particularly in language teaching.

As discussed, ePortfolio learning module was designed to guide learners to work more autonomously by diagnosing their own speech issues and finding ways to improve, using readily available resources on the internet. This was accomplished by scaffolding (Brunner, 1966) learners through a series of cyclical actions of reflection, inquiry, and integration (Eynon, Gambino, & Török, 2014). Thus learners were encouraged to engage in more autonomous learning (Reinders, 2011) by examining their performance, planning interventions, reviewing performance, and assessing improvement. The next section presents two theoretical models that informed the ePortfolio learning module, Tynjälä’s (2008) model of integrative pedagogy and Eynon and Gambino (2017), model of ePortfolio pedagogy. Then I will draw the threads together into one theoretical model that captures the various aspects of the ePortfolio learning module.

### **2.2.3 Theoretical models of relevance to this study**

This study, framed within ePortfolio pedagogy, was grounded in the pioneering work of Tynjälä (2008) and Tynjälä and Gijbels (2012) who developed the model of integrative pedagogy.

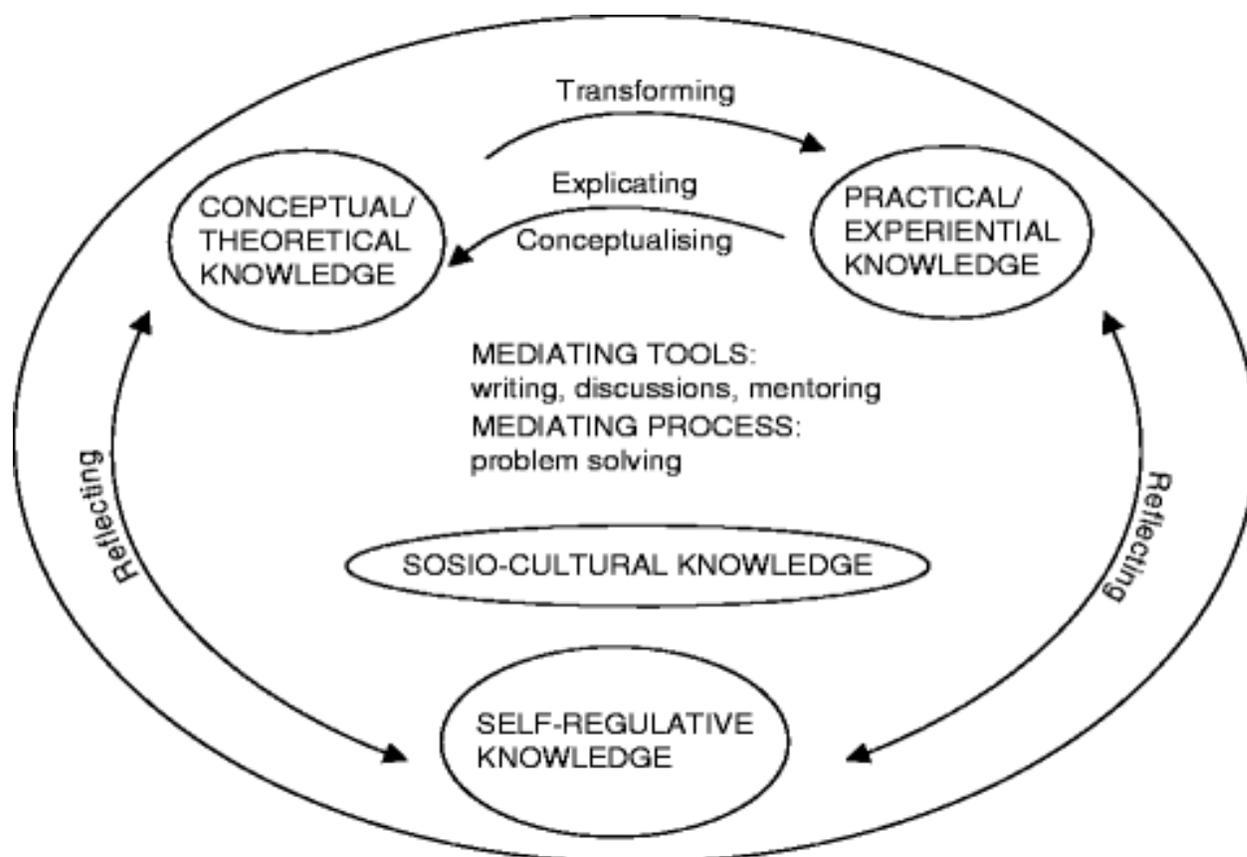
Following a discussion of the model of integrative pedagogy and how this model relates to and underpins ePortfolio pedagogy, how they informed the ePortfolio learning module under investigation is explained.

#### ***2.2.3.1 Tynjälä's model of integrative pedagogy***

According to Tynjälä and Gijbels's (2012) the model of integrative pedagogy (Figure 2.9) represents a “principle for bringing together key elements of learning in the development of expertise” (p. 211). The model illustrates how, in the context of a learning environment, theoretical knowledge gained through texts and lectures can be transformed into professional expertise. Tynjälä's model brings together key elements of cognitive constructivism (Vygotsky, 1978; Barret & Carney, 2005; Stefani et al., 2007), the importance of the social learning environment, and participation in communities of practice (Lave & Wenger, 1991; Wenger, 1998). In Tynjälä and Gijbels's (2012) words, the model “is intended to integrate the strengths of both cognitive constructivism and the sociocultural view of learning, in terms of developing environments to promote professional expertise” (p. 211). According to Tynjälä and Gijbels's (2012) model of learning, expertise is based on four integrated elements of knowledge: conceptual/theoretical; practical; self-regulatory; and socio-cultural. These four elements are defined below.

Figure 2.9

*The Model of Integrative Pedagogy* (Tynjälä and Gijbels, 2012, p. 212)



*Conceptual/theoretical knowledge*, or knowledge and understanding of theory and principles is transformed and explicated through practical experience (referred to as *experiential knowledge* in the model above). *Mediating tools* such as discussion with a teacher or small group, assignments and tasks, portfolios, and self-assessment tasks and the *mediating process* of problem solving are in the centre of the model because they comprise the learning environment and it is through engagement with this learning environment that learners integrate theory and practice. *Self-regulatory knowledge*, which includes metacognitive and reflective skills (see for

example, Bereiter, 2002) is linked to theoretical knowledge and practical experience through reflection on the various activities in this learning environment. The final element of the model is *socio-cultural knowledge* which is related to knowledge of how tools and artifacts are used in relevant social practices. Because this knowledge is embedded in relationships, its development is nurtured through *situated learning* (Lave & Wenger 1991) and, as Tynjälä's model suggests, requires becoming part of a *community of practice* (Bartin & Tusting, 2005; Lave & Wenger, 1991, Wenger 1998). Tynjälä (2012) states that

Sociocultural knowledge is something that exists in relationships rather than in individual minds. This means that participation in communities of practice is the only way to get in touch with this form of knowledge. In applying the model of Integrative Pedagogy, the ideal is that the practical knowledge component would be provided by authentic practice in which students participate; however, when this is not possible, it may also be organized through various simulation arrangements (p. 213).

Tynjälä's model of integrated learning is applicable to the work-place context and presents a learning model that develops expertise through a process which might best be described as *legitimate peripheral participation* (Lave & Wenger 1991). According to Lave and Wenger (1991), the term "provides a way to speak about the relations of newcomers to old-timers, and about activities, identities, and artifacts, and communities of knowledge and practice" (p. 29). Freedman and Adam (1996) suggest that as learners engage in this process, "learning is incidental and occurs as part of participation in communities of practice, whose activities are oriented toward practical and material outcomes" (p. 399) relevant to the particular work-place setting. For the purposes of this research, I have adapted the model for an academic learning context. In the academic context, researchers refer to the model of situated learning as *guided participation* (Freedman & Adam 1996; Rogoff, Matusov, & White, 1996), wherein, although

the goals of the teachers and the goals of the students may not be the same, “the goal of the activity is learning” (Freedman & Adam, 1996, p. 399). Whether Tynjälä’s model is applied to a work-place context or adapted to an academic context, the important component is that learners reflect on and share their knowledge and experiences as they participate in a community of individuals with common understandings. In Tynjälä’s model of integrative pedagogy, as in Eynon and Gambino’s (2017) ePortfolio pedagogy (see next section, 2.2.3.2), reflection is the key to integrating the various elements as an individual progresses in knowledge and ability.

### ***2.2.3.2 Eynon and Gambino’s pedagogy of the ePortfolio***

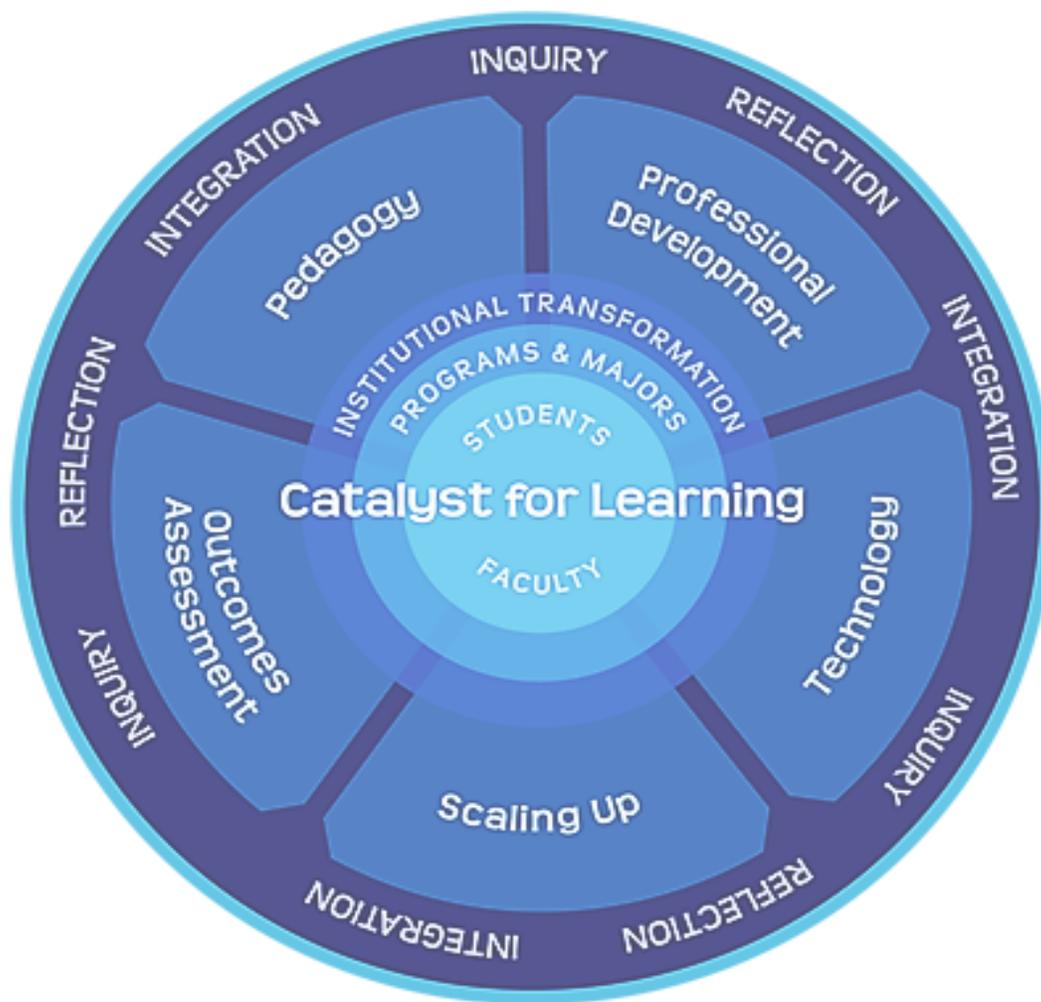
Integrative pedagogy supports the theoretical framework of ePortfolio pedagogy as elaborated by Eynon and Gambino (2017), and, as noted above, reflection is key to the successful application of this tool (Eynon, Gambino, & Török, 2014). Yancey (2009) states that “Reflective pedagogy transforms ePortfolio from a push-button technology into an engaging process of connection, integrating academic learning, life experience, and profound processes of personal growth” (p.8). The main strength of the electronic portfolio is that it allows for engagement in a vital community of shared interests, thereby facilitating the exploration and development of socio-cultural knowledge. “The ePortfolio becomes most compelling as students are asked to allow their inner lives to become outer lives – to incorporate their selves in their studies, their personal, subjective, social, academic, and disciplinary experiences – that is, to develop a public self” (Eynon, Gambino, & Török, 2014, p. 16).

As stated, building on integrative pedagogy as conceived by Tynjälä (2008) and Tynjälä and Gijbles (2012), Eynon and Gambino (2017, 2018) extended this notion to include electronic portfolios. According to Eynon and Gambino (2017), as with integrative pedagogy, successful

ePortfolio pedagogy is based on three guiding principles: inquiry; reflection; and integration. In relation to Tynjälä's model of integrative pedagogy (Figure 2.9), inquiry involves the connection between theoretical knowledge and experience mediated by problem solving, discussion, and mentoring. Reflection, understood as key to understanding and generating meaning from experience, is core to making use of artifacts collected and shared in the ePortfolio. Integrative learning encourages the learner to apply insights across situations in time, space, and discipline, both inside and outside the classroom. Figure 2.10 illustrates Enyon and Gambino's (2017) *the Catalyst for Learning* framework.

**Figure 2.10**

*Catalyst for Learning Framework* (Eynon & Gambino, 2017, p. 4)



This framework extends Tynjälä's (2008, 2012) integrative pedagogy model by introducing five interlocking sectors, (pedagogy, professional development (i.e., staff and faculty development), outcomes assessment, technology and scaling up (i.e., the broadening use of ePortfolios in a program or institution) centered around the learning core of students and faculty,

situated in particular programs and majors. However, as with integrative pedagogy, these sectors are guided by the three design principles of inquiry, reflection, and integration.

### ***2.2.3.3 Integrative and ePortfolio pedagogy inform the ePortfolio learning module***

The present study is informed by both integrative pedagogy (Tynjälä, 2008; Tynjälä & Gijbels, 2012) and ePortfolio pedagogy (Eynon & Gambino, 2017, 2018) as it seeks to investigate the particular use of ePortfolios in a 12-week learning module in an EAP classroom. The theoretical framework as described above is operationalized within the specific ePortfolio learning module under examination in this study as follows. As mentioned, in engaging with this learning module, learners were required to reflect on personal performance, examine evidence and generate questions. It required learners to test preconceived notions of their own articulation and fluency in English and to reflect on their findings. This interplay between theory and experience operationalized the relationship between conceptual or theoretical knowledge and experiential knowledge as postulated in Tynjälä's (2008) model of integrative pedagogy. Learners are then guided to conceptualize the issues through discussion and mentoring, and to find information and tasks available freely on the Internet that can help them improve their self-identified problems. As in the model of integrative pedagogy, the key is reflection on the process as self-regulated knowledge is developed. The ePortfolio learning module, which is the subject of this study, operationalizes Eynon and Gambino's (2017) ePortfolio pedagogic principles of inquiry, reflection, and integration as described above, by placing the activity within the context of an electronic portfolio that allows learners to review, reflect on learning over time and in space, and to share with other learners of various levels involved in the same activity, thus developing and participating in a shared community, or a space where learners can gain experiential knowledge

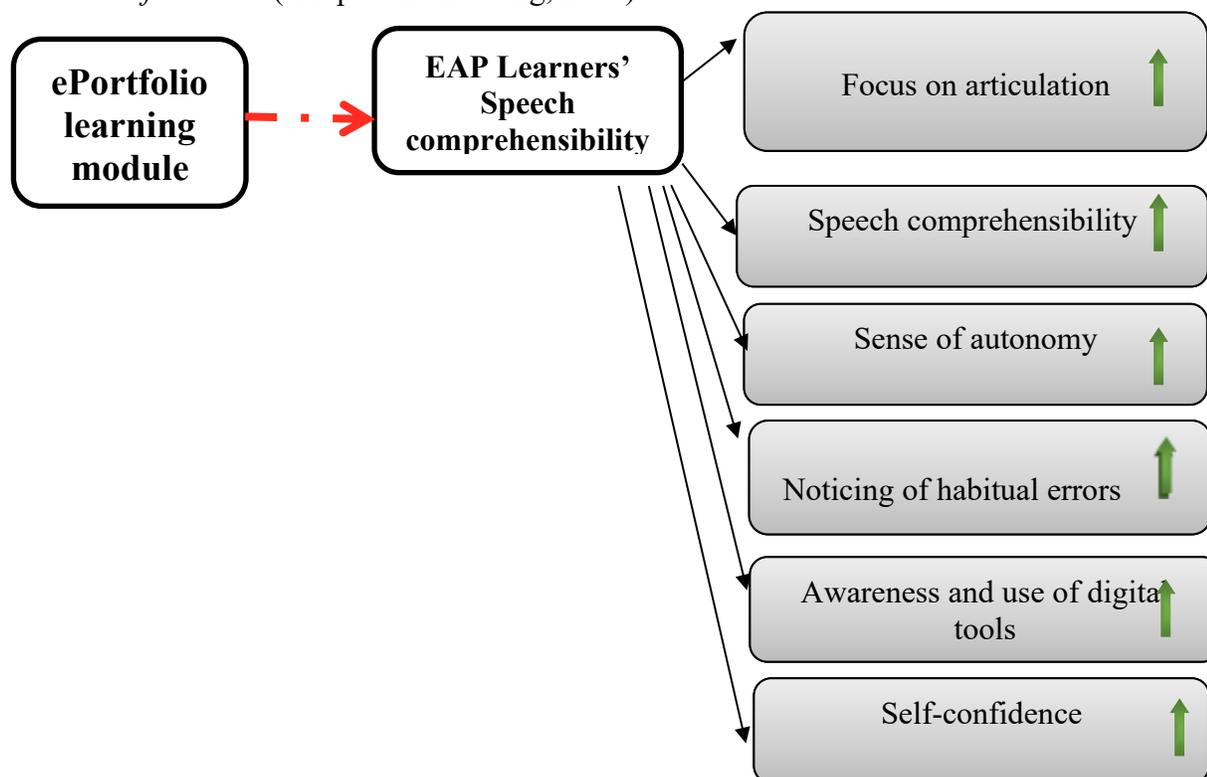
that supports the transformation of conceptual knowledge. The pedagogic principle of integration within the context of the ePortfolio addresses the link between the cognitive and affective aspects of learning (Eynon & Gambino, 2017) by helping learners develop “their inner voice, a stronger sense of identity and direction” (p. 39). According to Eynon and Gambino (2017, 2018), through reflection and inquiry, they are able to increase their focus on particular issues that may be troubling them, analyze them, and with guidance become aware of methods that can be practiced outside the classroom, thus empowering them in their own learning. Although the ePortfolio has not specifically been used in the improvement of speech comprehensibility, based on Eynon and Gambino’s theoretical approach it can be postulated that learners will benefit from:

1. increased focus on oral articulation;
2. increased noticing of habitual errors in articulation that may impede oral communication;
3. enhancement of speech comprehensibility;
4. increased sense of autonomy with regard to improving their speech comprehensibility;
5. increased awareness and use of the available digital tools for outside classroom practice;  
and
6. enhanced self-confidence in communicating orally in academic contexts.

These presuppositions are depicted in Figure 2.11. The red dotted line indicates the predicted relationship between ePortfolios and EAP learners’ oral performance. The green arrows show the increases that were expected to occur.

**Figure: 2.11**

*Presuppositions of the Relationship between the ePortfolio Learning Module and EAP Learner's Oral Performance (Adapted from Wang, 2010).*



Over time it was postulated that this activity would strengthen the target learners' confidence in approaching other situations they might encounter in their personal, professional, and academic lives, thus contributing to an autonomous approach to learning, where the learner identifies the goals, the means to achieve the goals, and the methods of assessing outcomes (Holec, 1979).

Based on the preceding discussion, the following section presents the theoretical framework that supports this study.

#### ***2.2.3.4 Bringing the threads together: Theoretical framework informing this study***

The ePortfolio learning module that was the focus of this study presented learners with a context that attempted to foster autonomous learning as they explored their speech comprehensibility,

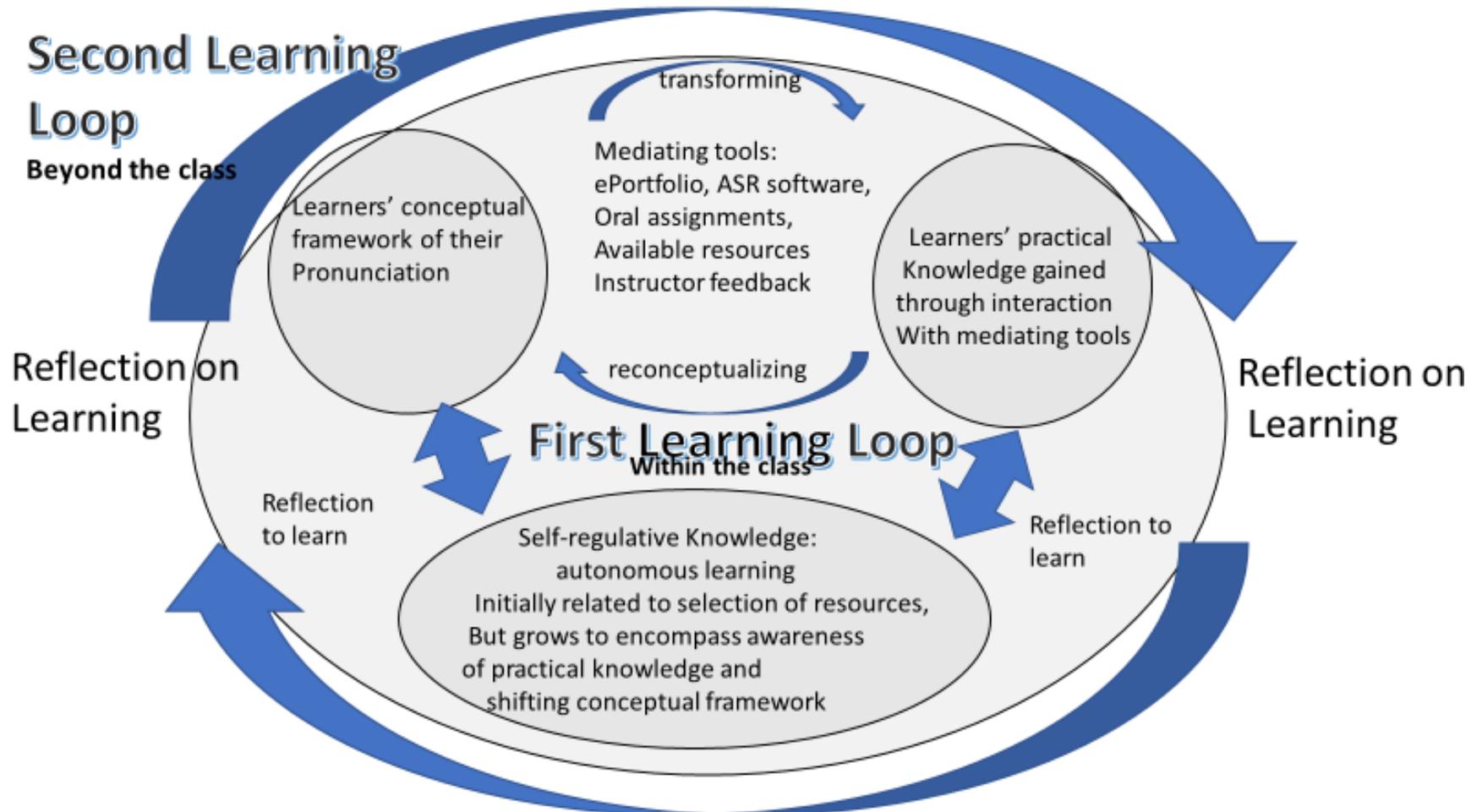
bringing together several theoretical models of autonomous learning as discussed previously.

Tynjälä's (2008) and Tynjälä and Gijbels's (2012) integrative pedagogy model and Eynon and Gambino's (2017, 2018) ePortfolio pedagogy form the basis of the present theoretical model, but it also incorporates Argyris and Schön's (1974) double loop model of reflective learning (see Figure 2.5) and Dewey's theory of learning and inquiry as expressed in his steps in reflecting for learning (see Figure 2.4).

The artefacts produced through engagement with the learning module were housed in the ePortfolio, allowing learners to reflect on past activities and improvement as well as the efficiency of the strategies and resources selected to achieve their stated goals. Thus, the use of the ePortfolio promoted reflection both at the level of class activity (see Figure 2.5, *First Learning Loop*, Argyris & Schön, 1974, or as in Figure 2.12, *Reflection to Learn*), and later was extended to contexts beyond the time and space of this specific class (*Second Learning Loop*, or *Reflection on Learning*). Thus, the ePortfolio was a tool that mediated autonomous learning, without which, any gains made through the use of the EAP learning module would have been limited to the specific class, indeed, to the specific activity within the module. This use of the ePortfolio supported the development of the features of autonomous learning within the individual, thus offering the possibility of these features being activated in other learning contexts.

**Figure 2.12**

*Theoretical model informing this Study: The Autonomous Learning Context (Adapted from Argyris & Schön, 1974; Eynon & Gambino, 2017; Tynjälä, 2012)*



Within this theoretical model, learners began with their preconceived notions and perceptions regarding their speech comprehensibility, which were transformed and reconceptualized as they gained practical knowledge through the use of the ePortfolio and other mediating tools. These tools included the assignments themselves, the use of Automatic Speech Recognition software, the recommended resources, and teacher guidance in the form of feedback on their reflections. This process of reconceptualizing the image of their speech comprehensibility was reiterative as they repeated the activities. Their growing understanding of their speech comprehensibility and how they could make use of the mediating tools contributed to their developing ability to self-regulate their learning. As they moved through the learning module, their understanding and knowledge of the context grew, first encompassing only the choices they made within the module, but ultimately including awareness of possible choices outside the class activity.

### **2.3 In a nutshell**

This chapter has reviewed literature related to the theoretical aspects of speech comprehensibility, ePortfolios, and learner autonomy. It focused on the benefits of using portfolios for assessment for learning and the issues and affordances involved in using electronic portfolios. It also explored practical issues in developing and assessing speech comprehensibility and learner autonomy. It can be concluded from the literature that all three of these elements are multifaceted, composed of different components, making it clear that any approach to combining them in one learning module is complex, but also promising with regard to fostering both speech comprehensibility and learner autonomy within the context of the electronic portfolio.

As mentioned previously, the purpose of the ePortfolio learning module under study was to fill the gap between the need to improve speech comprehensibility in tertiary level L2 learners and the amount of time available in the curriculum to engage in this activity. The main strategy

was to promote strategic learning skills that foster autonomous learning in this area, such that learners might be able to take control of their own learning trajectory both during the designated class and beyond, transferring the skill to other academic learning contexts. The purpose of this study was to assess whether the learning module was successful in its goals, providing motivation for continued use in the EAP tertiary level classroom. The results of this study may also prove interesting and useful for any ESL teacher who has noted a problem with speech comprehensibility in L2 students, but been unsure of how to approach the issue, or unable to spend the time needed to address it. Two research questions were formed to explore the impact of this ePortfolio learning module on learner's speech comprehensibility and the development of autonomous learning.

The following chapter presents an overview of the methodology, including a detailed examination of the research questions being addressed in this study, an explanation of the research philosophy and design overview, and a brief description of the research instruments, data collection procedures, and analysis.

## CHAPTER THREE: METHODOLOGY

### 3.1 Overview

In order to explore how L2 speech comprehensibility and autonomy were fostered in the context of the ePortfolio learning module, an overarching case study approach with a mixed-methods research design was employed. The methodology is discussed in this chapter. Following a discussion of the research philosophy and an overview of the research approach, I present the specifics of the research method. I then discuss issues of validity, trustworthiness, and meaningfulness. To aid the reader in navigating the information, Table 3.1 presents the chapter contents.

**Table 3.1**

*Summary of Chapter Three: Methodology*

| Section  | Content   |
|--|---|
| <b>3.1 Overview</b>                                      | 3.1.1 Research Philosophy<br>3.1.2 Research Questions as they relate to the methodology<br>3.1.3 Overall research design <ul style="list-style-type: none"> <li>3.1.3.1 Why a case study approach?</li> <li>3.1.3.2 Why a mixed methods research design?</li> <li>3.1.3.3 Ethical considerations</li> </ul>   |
| <b>3.2 Method</b>  | 3.2.1 Overview<br>3.2.2 Phase I: Quantitative <ul style="list-style-type: none"> <li>3.2.2.1 Participants</li> <li>3.2.2.2 Materials and instruments</li> <li>3.2.2.3 Procedures</li> <li>3.2.2.4 Analysis</li> </ul> 3.2.3 Phase II: Qualitative <ul style="list-style-type: none"> <li>3.2.3.1 Participants</li> <li>3.2.3.2 Materials and instruments</li> <li>3.2.3.3 Procedures</li> <li>3.2.3.4 Analysis</li> </ul> |
| <b>3.3 Validity, trustworthiness, and meaningfulness</b> |   |
| <b>3.4 In a nutshell</b>                                 | Chapter summary   |

### 3.1.1 Research philosophy

It is important to explore the research philosophy that underpins the construction of knowledge in any research undertaking, and particularly important in this study where the researcher performed the dual role of observer and teacher. Following Tashakkori and Teddlie (1998), the theoretical approach taken in this research was pragmatic as this approach allowed the researcher to select the method or methods that best suited the research question (Saunders, Lewis, & Thornhill, 2009) (see section 2.1.3).

Why a pragmatic approach?

Historically, there have been opposing views as to the right way to conduct research on teaching (Johnson & Onwuegbuzie, 2004). During the 60s and 70s, the most highly valued research in teaching was based on the scientific method, focused observable facts subjected to rigorous statistical analysis, i.e., positivism (Gage, 1989). This approach to research on teaching came under severe criticism from many sides, developing into what became known as *the paradigm wars* (Johnson & Onwuegbuzie, 2004). Many theorists suggested that (cf. Guba, 1990; Smith, 1983, 1989; see also Willis, 2012 for a discussion), because human affairs could not be summed up by listing rules of cause and effect, the behavioural research on teaching of the 60s and 70s could not offer the types of insights teachers needed to address their concerns. Human endeavors, including teaching and learning, are motivated by intentions, goals, and purposes that give them meaning. Thus, a better way of analyzing the phenomenon was to focus on interpretive research methods which explored how students and teachers constructed shared meaning in the classroom and how this construction of knowledge in the mind of the learner could be affected (see section 2.2.2.1.2).

A third view was that of the critical theorist. The critical theorists' position was that neither the positivists using the scientific methods, nor the interpretivists exploring socially constructed experiences of reality had actually been able to get to the heart of the issue and what was needed was "a reconsideration of the whole structure of society in which education, including teaching, goes on" (Gage, 1989, p. 5). In 1989, Gage predicted that the future of research would be that "all researchers realized that what might be called the oppositional component of the paradigm was invalid" (p. 6). In other words, each of these paradigms, the positivist, the constructivist, the constructionist, and critical theory, could shed light on a research problem. As Gage put it "[p]hilosophical analyses resulted in a triumph of pragmatic resolutions of paradigm differences over claims of exclusive possession of the one true paradigm" (p. 7). Tashakkori and Teddlie (1998) suggested that pragmatism was "intuitively appealing" because it allowed the researcher to approach the study using the method the researcher decided were most appropriate. Thus, the prevailing view at present is that the researcher is free to adopt the philosophical paradigm or blending of paradigms that best suits the research questions.

With regard to this study, discovering the impact of the ePortfolio learning module on learners was of high relevance to the researcher as teacher. Thus, the theoretical approach was pragmatic, as central to the inquiry, and pivotal in selecting research methods, were the research questions (Saunders, et al, 2009), or what exactly the researcher/teacher wished to know. Considering the advice of Saunders, et al (2009), that the research philosophy a researcher adopts presents "important assumptions about the way in which you view the world" (p. 108) and such assumptions support the choice of research methodology and strategy, this study employed an overarching case study approach as this approach offers "a potential bridge across paradigms"

(Luck et al., 2006 p. 103). In other words, according to Luck et al. (2006), case study offers the researcher ontological, epistemological, and methodological flexibility and the freedom to inform the inquiry from qualitative and quantitative methods, both of which provide distinctive contributions and are mutually informative. Thus, the research design was a mixed methods explanatory research design. It was explanatory in nature as it attempted to explain if and how speech comprehensibility and autonomous learning were fostered in the context of the ePortfolio learning module implemented in an EAP class.

Saunders, et al (2009) suggest that within the pragmatist's view it is possible to work with "variations" in the researcher's epistemological and ontological philosophies, and Tashakkori and Teddlie (1998) suggest it is more useful to see the opposing philosophies as representing a continuum rather than opposites. Thus, the discussion of ontology and epistemology that follows is meant to indicate influences on the researcher's thinking and to some degree, where on the continuum this study rests.

Why a social constructionist approach?

Ontologically, this study was informed by a socially constructionist view of reality (Lock & Strong, 2010). It was situated in a tertiary academic institution that values a subjectivist view and has encouraged and supported teachers/learners as they build their practice through reflection and discussion. This aligns with the position that perceptions and actions of the relevant individuals create social phenomena. Through a continual process of social interaction, these phenomena are in a state of evolution and change (Saunders, et al. 2009). In other words, in line with the constructionist theoretical view, 'reality' is socially constructed by its participants (Berger and Luckman, 1966), and the voice of the participant is crucial to the investigation.

Epistemologically, of central value to research grounded in this philosophy is exploring the subjective feelings and attitudes motivating the research participants. This study investigated the reflections of participants as they engaged in the tasks designed to raise awareness of their role in improving their speech comprehensibility. It also collected information through a questionnaire and interviews regarding their experience of the 12-week learning module. As the researcher, I observed the participants actions, standing apart from them, and as their teacher I interacted and participated with them, awarding grades, encouraging better performance, explaining the goals of activities and tasks, discussing their concerns. Thus, at times, for me, as Tashakkori and Teddlie (1998) indicated, the boundary between the *knower and the known* is blurred. In other words, during the term I was a teacher, participating in the activities, and when the term was completed, I was a researcher, collecting data for the investigation. (This transition was subject to ethics review. See section 3.1.4.3.) Although there was a distinct difference between my activities as a teacher and as a researcher, both in terms of the timing and the types of activities undertaken, a blending of knowledge gained as participant and as researcher was inevitable.

The following section presents a brief description of the overall research design of the study and then examines the case study approach and mixed methods design in more detail.

### 3.1.2 Research questions

The study was guided by the following two research questions, each divided into two parts, Part A and Part B. Part A introduces the main question and Part B asks, ‘how and why.’

#### **RQ1:**

**Part A:** Did the use of an ePortfolio learning module implemented in a university EAP course foster the improvement of L2 learners’ speech comprehensibility?

**Part B:** If yes, how and why? If not, why not?

Comprehensibility in this study is defined as the listener's effort in understanding the intended message (Munro & Derwing, 1995). It is operationalized as the listener's (i.e., rater's) assessment of the learner's articulation, intonation, word attack, speed, hesitation, stress, and volume or degree of loudness of the utterance.

**RQ2:**

**Part A:** Did the use of an ePortfolio learning module implemented in a university EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility?

**Part B:** If yes, how and why? If not, why not?

In accordance with Benson (2013) and Holec (1979) autonomy is defined in this study as the ability of learners to control their own learning. Learners' ability to control their own learning is operationalized as the following activities and identified in learners' reflections through analysis:

- identifying specific issues that interfere with comprehensibility,
- planning ways to improve,
- implementing the plan,
- revising performance,
- evaluating outcome, and
- monitoring progress.

The following section presents the overall research design.

### **3.1.3 Overall research design**

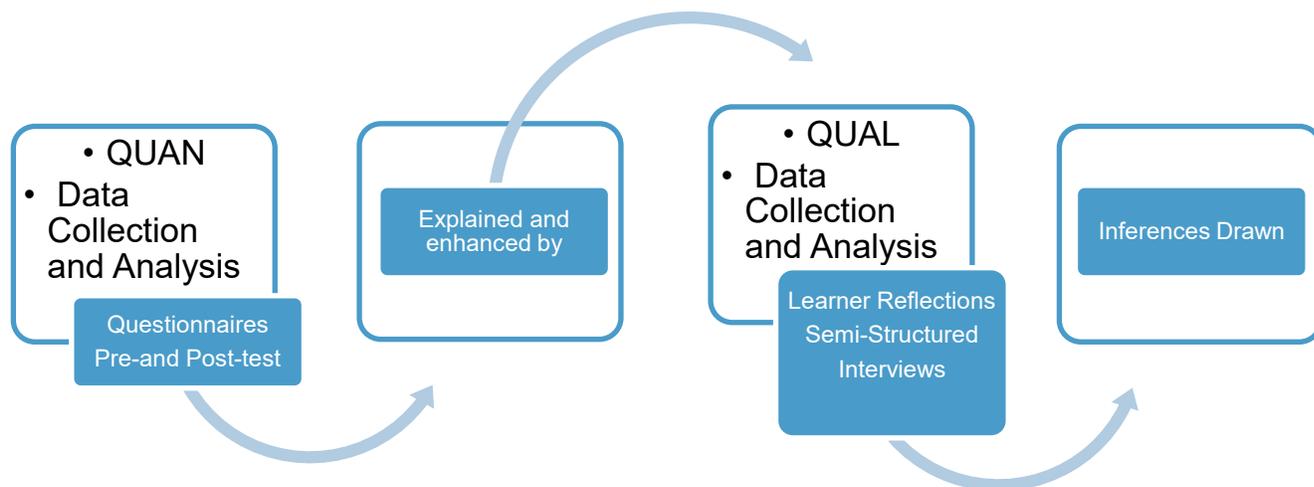
To better understand the relationship between the ePortfolio learning module, the improvement of L2 learners' comprehensibility, and how learner autonomy can be promoted in such contexts, this study employed an overarching case study approach with a mixed methods (MM) research strategy. With regard to the case study approach, this research was "a detailed, intensive study of a particular contextual, and bounded, phenomenon" (Luck et al., 2006, p. 104) which was

conducted in real time. With regard to the MM research strategy, an explanatory sequential design (Creswell, 2014), consisting of two phases. Phase I was primarily quantitative, using two instruments for data collection: a pre- and post-treatment test of comprehensibility (see section 3.2.2.2; also see Appendices A and B); and a questionnaire (see section 3.2.2.2; also see Appendix C). This was followed up by a qualitative data collection phase (Phase II). Phase II data was collected through document analysis (see Appendix H) and semi-structured interviews (see Appendix I).

The questionnaire and the pre- and post-treatment test provided the Phase I quantitative component, eliciting information about the participants' perceptions, practices, and concerns regarding their level of speech comprehensibility and comfort engaging with the technology of an ePortfolio. In contrast, the document analysis and semi-structured interviews in the qualitative components of Phase II provided the researcher with the opportunity to probe deeper into both the participants' perceptions and practices, uncovering elements of autonomous learning. The case study approach and MM research design were selected because they provided the flexibility that would best answer the research questions. The research design, with its two phases, is depicted in Figure 3.1.

**Figure 3.1**

*Explanatory Sequential Design* (Adapted from Creswell, 2015, p. 39)



It is worth noting here that although the research process is represented in a linear fashion in Figure 3.1, the process was more cyclical in practice. Ultimately the findings and analysis from both types of data collection were converged to form a coherent picture of the phenomena.

#### ***3.1.4.1 Why a case study approach in investigating the impact of the ePortfolio learning module?***

This study employed an overarching case study methodology to track the social phenomena of autonomy, learning and speech comprehensibility. According to Runson and Höst (2009), a case study approach is appropriate in contexts such as this which are “investigating complex real-life issues, involving humans and their interactions with technology” (p. 134). Many researchers suggest the main characteristic of case study research is that it is an empirical investigation of a contemporary phenomenon in a context in which the researcher explores how individuals (and/or groups) relate to a particular issue (See, Creswell, 2015; Robson, 2002; Runson & Höst, 2009; Yin, 2003, 2018). Case study allows for meaningful understanding of complex real life events

based on knowledge derived from the context (Luck et al., 2006; Yin, 2003). According to Creswell (1994), case study research is frequently employed in studying human and social sciences. In case study inquiry, the researcher focuses on:

a single entity or phenomenon (“the case”) and activity (a program, event, process, institution, or social group) and collects detailed information by using a variety of data collection procedures during a sustained period of time (p. 12).

In other words, case study is an appropriate choice when a single population and/or subject can be easily identified, and Ragin (1992) suggests that “Implicit in most scientific investigations is that the objects of the investigation are similar enough and separate enough to permit treating them as comparable instances of the same general phenomenon” (p.1). In this investigation, my EAP classes were considered a single entity and the use of the ePortfolio, including tasks, was the activity. In addition, I used a variety of data collection procedures during a period of twelve months or three academic terms.

Yin (2018) suggests that one of the criteria for choosing to adopt case study research as a mode of inquiry is the type of research questions in the study. Case study research is particularly relevant if the focus of the research questions is to explain how or why a particular social phenomenon works and requires an in-depth description of the phenomenon bounded in time and space. Case study research was relevant to this study because the study focused on explaining if, how, and why there was an improvement in speech comprehensibility in the context of developing autonomous learning in the ePortfolio learning module. Table 3.2 compares the characteristics of case study research as outlined by Yin (2018) with the characteristics of this study.

**Table 3.2**

*Comparison of Characteristics: Case Study Research (Adapted from Yin, 2018)*

| Characteristics of Case Study Research                                    | Characteristics of this Study  |
|---|--|
| a single entity or phenomenon bounded by time                             | The ePortfolio learning module delivered in an advanced level EAP program over a 12-week term  |
| Collects detailed information by using a variety of collection procedures | Information collected by questionnaire, pre- and post-treatment test, learning reflections; semi-structured interviews   |
| Asks the questions “why” and “how”  | In what way does the ePortfolio learning module within a tertiary level class foster the improvement of L2 Learners’ speech comprehensibility?<br>How does the use of ePortfolio learning module in a tertiary level class promote learner autonomy within the context of enhancing L2 oral comprehensibility? |

Although researchers have identified several types of case studies (See, Merriam 1988; Savin-Baden & Major; Stake, 2005), according to Yin (2018), there are three main types: exploratory, descriptive, and explanatory, stating that there are areas of overlap between the strategies and the boundaries are not always clear. An exploratory case study is useful when the study inquiry is shaped by “how” questions; descriptive case studies generally focus on “what” questions by providing a rich narrative description of the interactions related to the phenomenon; when the researcher is focusing on both “how” and “why” questions, the explanatory case study strategy is most suitable. This study was an explanatory case study, as it attempted to answer both the “how” and “why” of the phenomena under examination.

#### ***3.1.4.2 Why a mixed methods research design?***

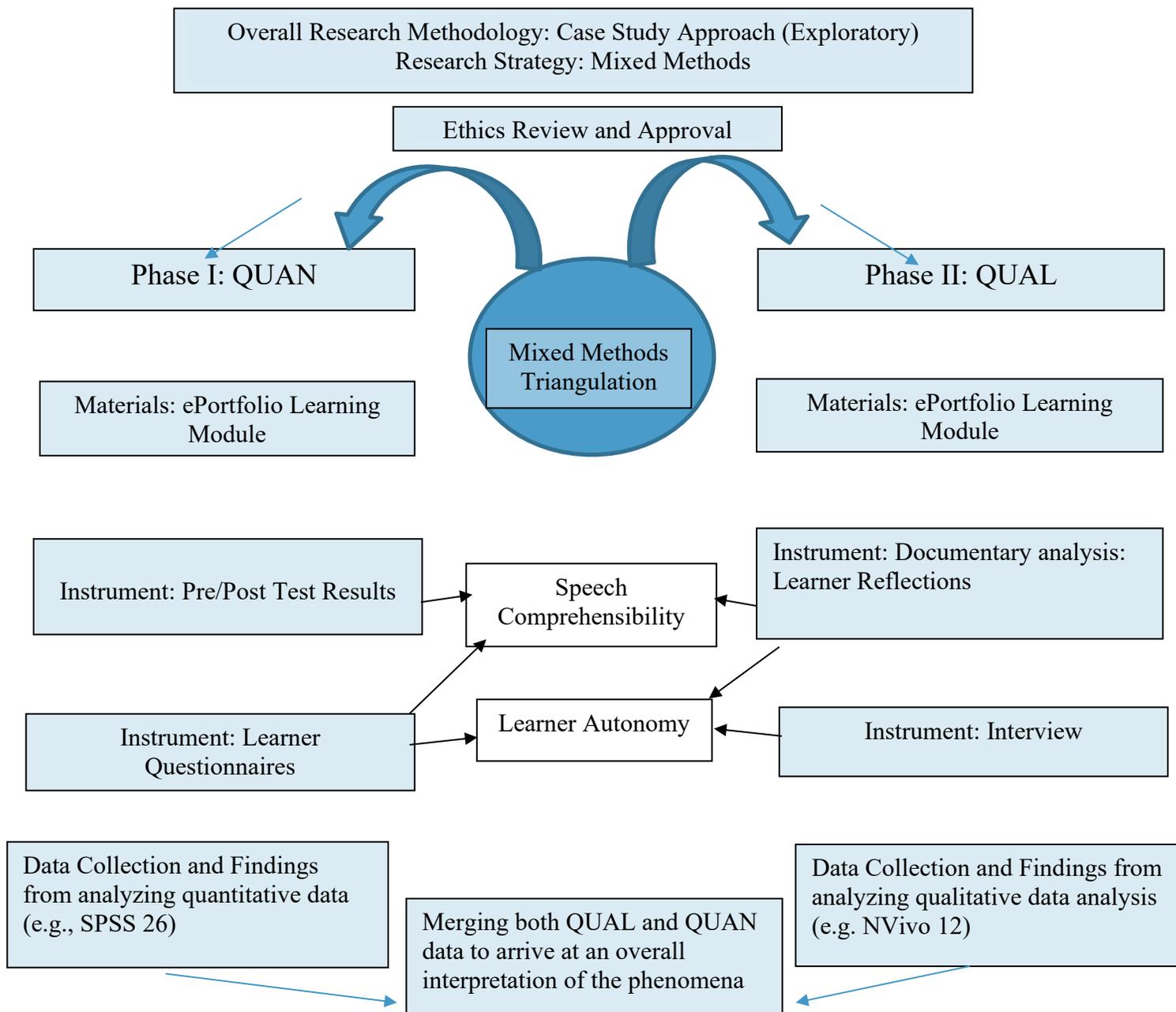
According to Bryman (2007), if mixed methods research is to be distinguished from research that simply collects qualitative and quantitative data in a single study, the researchers must present their conclusions in “such a way that the qualitative and quantitative components are “mutually illuminating” (p. 8). In this study, the learners’ reflections focused on the growing

awareness of issues in speech comprehensibility and how these issues might be addressed. However, in these reflections, learners did not explore how they integrated and promoted their learning within the context of the ePortfolio. Rather, this aspect was examined through the questionnaire data collected at the end of term. The questionnaire data was then used to illuminate how the context enabled learners to progress. In addition, the pre- and post-treatment tests provided valuable evidence of the impact of the learners' growing awareness of the weaknesses in their speech comprehensibility and their efforts to address them. Thus, the qualitative data was deepened and enriched through the lens of the quantitative data, and the quantitative data is given breadth and meaning by linking learners' feelings regarding the use of the digital tools to the progress made in fostering autonomy in the improvement of their speech comprehensibility (Johnson et al., 2007; Tashakkori & Teddlie, 2005). In addition, the use of both methods strengthened the study because of triangulation, that is, checking research by comparing findings from one method against the other. According to many scholars (See, Creswell, 1996, 2003; Denzin, 1978, 2009; Dornyei, 2007; Tashakkori & Teddlie, 1998, 2005), triangulation of results reinforces the reliability, validity, trustworthiness, and meaningfulness of research findings.

Figure 3.2 depicts the overall research design, showing how each instrument of data collection situated within the context of the Portfolio learning module contributed to the overall understanding of the speech comprehensibility and autonomous learning. Ultimately the findings and analysis from both types of data collection were converged to form a coherent picture of the phenomena.

**Figure 3.2**

*Roadmap of Research* (Adapted from Onaiba, 2013, p.98)



### 3.1.4.3 Ethical considerations

This research received clearance from Carleton University Research Ethics Board which

follows the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (see Appendix D for Ethics Clearance Certificate). Prior to data collection, permission to conduct the study was granted from the School of Linguistics and Language Studies.

In order to maintain a distance between my role as a teacher and as a researcher, several steps were put into place. Near the end of the term, a neutral third party provided learners with information documents and consent forms detailing research procedures and participant rights (Appendices E and F). The neutral third party was familiar with the study and could answer learners' questions, so as to avoid my presence during this step. Information regarding the research was presented to the learners after they had completed the ePortfolio learning module for two reasons. The first reason was to avoid affecting learner responses in anyway. The second reason was that learners could review their responses and decide if they were comfortable sharing their documents and results. If learners agreed to participate in the study, they were able to grant access to only the parts of the research data they felt comfortable sharing. During the class, the teacher/researcher was not aware of who had agreed to participate in the study. Data collection did not commence until participants had signed consent forms stating their willingness to participate in this research, the course they were enrolled in was completed, and all grades were published. Completed consent forms were not made available to the me as the teacher/researcher until the course was completed and all grades were published. All research data were stored in password-protected digital folders to ensure participant's anonymity and confidentiality. All names were replaced by case numbers.

The following section describes the methods used in collecting and analyzing data in both phases of the study: Phase I – quantitative and Phase II – qualitative

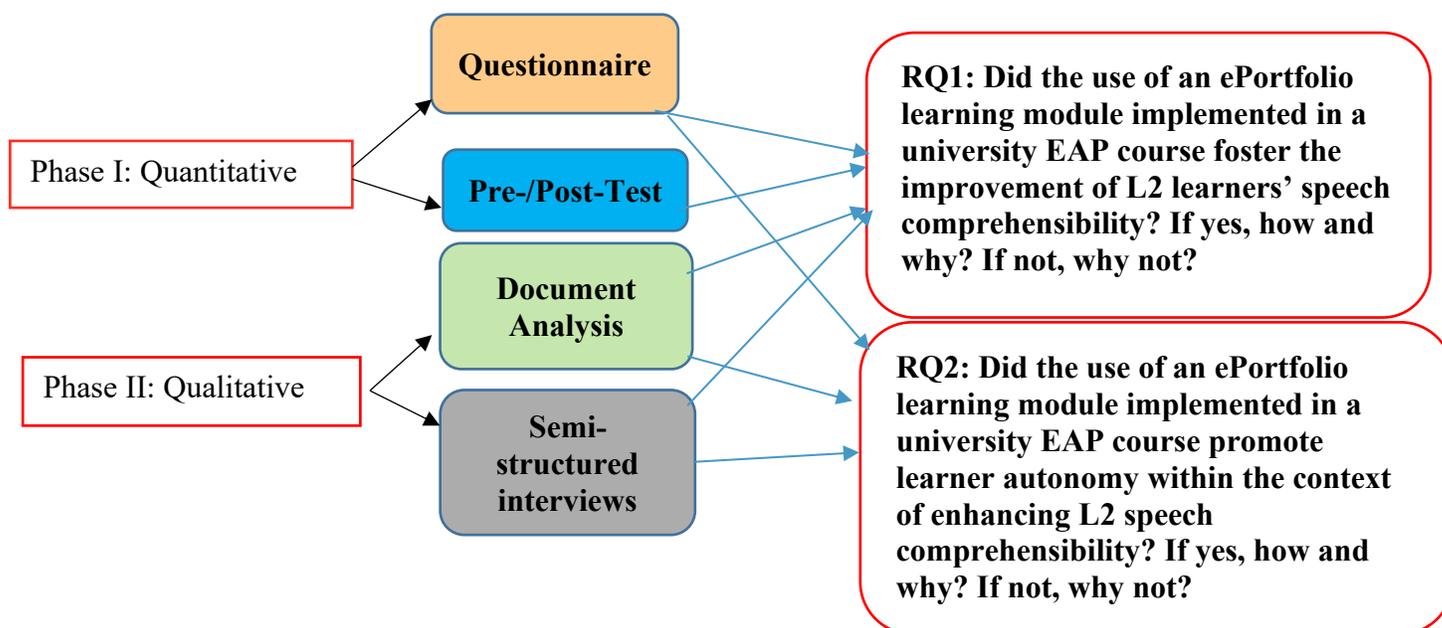
## 3.2 Method

### 3.2.1 Overview

Both Phase I and Phase II of the study contributed to an understanding of the phenomena. The purpose of dividing the study into Phase I and Phase II was to facilitate data organization and analysis. Phase I (quantitative) mainly addressed RQ1, providing some data that was relevant to RQ2 and Phase II (qualitative) mainly addressed RQ2, while still providing some data that was relevant to RQ1. How Phase I (quantitative) and Phase II (qualitative) relate to the research questions is depicted in Figure 3.3.

**Figure 3.3**

*Methods and Research Questions*



As mentioned, the study consisted of two phases, each with specific data collection and analysis procedures. Table 3.3, *Summary of Data Collection*, is presented here in order to aid the reader in understanding the organization of these procedures.

**Table 3.3***Summary of Data Collection*

| PHASE  | RESEARCH QUESTION  | INSTRUMENT   | NUMBERS   | ANALYSIS   |
|--|--|--|---|--|
| <b>Phase I</b><br><b>Quantitative</b><br><b>Academic Year 2019</b><br><b>Terms:</b><br><b>Winter</b><br><b>Summer</b><br><b>Fall</b> | RQ1 Part A: Did the use of an ePortfolio learning module implemented within a university EAP course foster the improvement of L2 learners' comprehensibility?                            | Pre- and Post-Treatment Test: Samples of learners' oral language were collected at the beginning and at the end of the learning module, using a re-aloud task based on a version of a standardized oral language assessment. | Pre- and Post-Treatment Test<br>N=51<br>Overall Results <ul style="list-style-type: none"> <li>• Winter – 17</li> <li>• Summer – 24</li> <li>• Fall – 10</li> </ul> | SPSS Version 26 <ul style="list-style-type: none"> <li>• Wilcoxon matched pairs Signed Ranks Test</li> <li>• Paired sample t-test</li> <li>• Analysis of Variance (ANOVA)</li> </ul> |
|  | RQ1 Part B: If yes, how and why?   | Pre- and Post-Treatment Test: analysis of raters' assessment of factors contributing to improvement:<br><i>Improved</i> (36) and<br><i>Not Improved</i> (15)   | Pre- and Post-Treatment Test<br>N=51 <ul style="list-style-type: none"> <li>• Improved/Not improved</li> </ul>  | SPSS Version 26 <ul style="list-style-type: none"> <li>• Logistic Regression</li> </ul>  |
|  |  | Questionnaire of learners' beliefs and attitudes: analysis of relationship between beliefs and attitudes and improvement   | Questionnaires: N=55 <ul style="list-style-type: none"> <li>• 23 questions</li> </ul>   | SPSS Version 26 <ul style="list-style-type: none"> <li>• Pearson product moment correlation coefficient ®</li> <li>• Spearman Rank Order correlation (rho)</li> </ul>                |
| <b>Phase II</b><br><b>Qualitative</b><br><b>Academic Year 2019</b><br><b>Terms:</b><br><b>Winter</b><br><b>Summer</b><br><b>Fall</b> | RQ2 Part A: Did the use of an ePortfolio learning module implemented in a university EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility? | Participant reflection transcripts   | 18 reflection scripts   | Coding/NVivo Version 12  |
|  | RQ2: Part B: If yes, how and why?  | Participant Interview transcripts  | 4 Interview scripts: <ul style="list-style-type: none"> <li>• 1 virtual interview</li> <li>• 3 email responses</li> </ul>   | Coding/NVivo Version 12  |

The following section describes the participants, materials and instruments, procedures, and analysis for Phase I of the study.

### **3.2.2 Phase I: Quantitative**

#### **3.2.2.1 Participants**

The participants in this study were volunteers from three intact groups enrolled in the twelve-week advanced level of an EAP program at a mid-sized Canadian English-medium university. There was a total of 75 students enrolled in the three groups. Of those, 55 students (or 73% of enrolled students) gave informed consent and became participants in Phase I of the study.

Enrollment in this program was a requirement for those learners who had not achieved the university identified entrance level score on a standardized English proficiency test (Test of English as a Foreign Language – TOEFL; International English Language Testing System – IELTS; or Canadian Academic English Language (CAEL) Assessment). Students enrolled in this advanced level course had either been placed into the course by virtue of their score on an English proficiency test or had passed from the intermediate level of the program the previous term. At this level, they were eligible to take 2-3 courses in their major; therefore, this course supported them in academic work they undertook concurrently.

As expected, based on the large number of international Chinese students in the general population of the university, the majority of participants in this study spoke Chinese as their first language (L1) (65%). Arabic was the second most common L1 (13%), and the third most common L1 was Farsi (8%). Other languages represented were French, Spanish, Urdu, Russian, Romanian (24%). The ages of 90% of the participants ranged between 18 and 22, while 10% ranged between 25 and 35 years of age. Males outnumbered females at 65%. The average amount of time spent in Canada was 22 months, with a range of 12 to 27 months. The majority

of students were undergraduates (96.7%). They were studying in a variety of programs as follows: Economics (26%), Computer Science (20%), Engineering (17%), Communications (17%), Science (10%), Undecided (10%). Table 3.4 provides demographic information broken down by section.

Table 3.4

*Demographic Information by Section of EAP Course (N=55)*

| Section of EAP course            | N  | L1  | Gender                  | Major   | Average Time in Canada |
|----------------------------------|----|---|-------------------------|---|------------------------|
| Section 1<br>Winter Term<br>2019 | 18 | Chinese (12)<br>Arabic (5)<br>Other (1)             | Male (12)<br>Female (6) | Economics (3)<br>Engineering (5)<br>Computer Science (1)<br>Communications (6)<br>Science (2)<br>General (1)  | 18.8 months            |
| Section 2<br>Summer Term<br>2019 | 24 | Chinese (17)<br>Farsi (3)<br>Other (4)              | Male (15)<br>Female (9) | Economics (13)<br>Engineering (2)<br>Computer Science (5)<br>Communications (2)<br>Science (4)<br>General (2) | 22.2 months            |
| Section 3<br>Fall Term<br>2019   | 13 | Chinese (7)<br>Arabic (2)<br>Farsi (1)<br>Other (3) | Male (9)<br>Female (4)  | Economics (2)<br>Engineering (3)<br>Computer Science (5)<br>Communications (1)<br>General (2)                 | 24.9 months            |

Note: Number in parenthesis refers to the number of individuals in each group.

The next section describes the materials and instruments used in Phase 1.

### **3.2.2.2 Materials and instruments**

- **Materials: The ePortfolio learning module**

Participants were engaged in the ePortfolio learning module during the 12-week period that made up the academic term. They accessed their portfolio through an electronic portfolio system

hosted by the university and powered by *Mahara*, an open source ePortfolio software. All students enrolled in the university are allowed access to this portfolio system and may create a number of different portfolios depending on the requirements of their classes. They have access to these portfolios during their time enrolled at the university and for two years beyond their graduation. They have the ability to designate with whom they share their portfolio – peers, teachers, potential employers.

The learning module housed in the ePortfolio consisted of a template that contained six pages, each with a different title, and sections for them to post their videos and texts. The six pages were:

- Initial Assessment
- Personal Introduction
- Exploring My Major
- Exploring My Research Topic
- Analyzing My Progress over the Term
- Final Assessment

Each page was accompanied by an assignment sheet (see Appendix G) that contained detailed instructions for that particular posting and a timeframe of approximately three weeks for completion. They also had access to the rubric that was used to assess their work. Relevant to Phase I of the study, the ePortfolio learning module housed the pre- and post-treatment tests on the first and last pages (Initial Assessment; Final Assessment). The pre- and post-treatment test is described in the next section.

- **Instrument 1: Pre- and Post-Treatment Test**

To measure the effect of a treatment (in this study the EAP ePortfolio learning module), it is necessary to administer a pre-treatment and post-treatment test (Bachman, 2004; Gray, 2013). As

part of the 12-week learning module, recorded samples of learners' oral language were collected at the beginning and at the end of the learning module, using a re-aloud task based on a version of a standardized oral language assessment (i.e., The Oral Language Test of the CAEL Assessment). The pre- and post-treatment test tasks required learners to read and record a short academic text (160 words) taken from a first-year academic text (see Appendix B). This task type was chosen because the input could be controlled and the assessor was able to look for specific metalinguistic features that contribute to comprehensibility such as self-monitoring to identify errors and problems, correcting inefficient approaches and behaviours, recognizing syllable, word, phrase, clause, and sentence boundaries in speech/print (Adrián, 2014). With regard to producing a grade, the pre- and post-treatment samples of all learners were assessed by the teacher/researcher. In accordance with Derwing, Munro and Thomson (2008), the rater was required to answer the question "Are you able to understand the meaning of the spoken text with relative ease?" Although most researchers suggest a 9-point rating scale (see Munro, 2017), an 11-point rating scale was used, with 0 = incomprehensible and 10 = No problem (Appendix A). This rating scale was selected because of its validity as a scale used in a standardized oral proficiency test (CAEL Assessment) (Fox & Fraser, 2008). In addition, the samples of those who agreed to participate in the study were assessed by language assessors who had been accredited as CAEL Assessment Oral Language assessors, and rater assessments were compared for inter-rater reliability.

- **Instrument 2: Learner Questionnaire**

Questionnaires are a valuable research tool because by using them researchers can quickly collect a large amount of information regarding participants' demographics, perceptions and

attitudes in a form that is easily processable (Creswell & Plano Clark, 2011; Dörnyei & Taguchi 2002). A questionnaire was designed to collect information about the impact of engaging in the ePortfolio learning module on students' perception of their oral language skills and their ability to select their own strategies for improvement (see Appendix C). It also sought to uncover how learners responded to their experience of using the ePortfolio technology and of sharing their activity with others in the class. (For a discussion of the importance of learner beliefs and autonomy, see section 2.2.2.1.2.) This instrument helped the researcher understand the relevant system from the perspective of those involved (Kaplan & Maxwell, 2005). Questions included in the questionnaire were based on a survey developed by Buzzetto-More (2010) in which she collected information on the impact of an ePortfolio used for summative assessment. The questionnaire in this study was piloted over several previous academic terms (approximately 120 participants), which helped to check the clarity of instructions, questionnaire items and the time allocated to complete the questionnaire. Importantly, the researcher's experience as an EAP teacher, familiarity with the context of study, and findings from previous administrations of the learning module, all played a role in enhancing the content validity of the questionnaire (Cheng, 1998). Some questions were changed or deleted, and others were added to make it relevant for the purpose of collecting information about the impact of the ePortfolio learning module. The final version contained 23 items as described below.

The questions were based on a 6-point Likert scale and addressed different features or aspects of autonomy as well as the experience of using the technology. Based on Holec's (1981) definition of autonomy, which labeled autonomy as an ability to take charge of one's learning, and Benson's (2001, 2006) psychological version of autonomy, which labeled it as a developing

capability based on gradual independence, several questions used wording such as “I was able to...” Benson (2001) also suggested that autonomy is dependent on the development of strategies and tools; therefore, several questions used wording such as:

- I will use methods...
- ...helped me develop analytical skills...
- ...improved organizational skills...

Because autonomy has been defined by Holec (1981) and Benson (2001), as an ability to act independently, several questions used wording such as;

- ...discovered ways I could help myself..
- ...set my own goals...
- I used the materials available...

Because reflection is considered the heart of autonomy by many theorists (See Benson, 2006; Holec, 1979; Little, 2020; Little & Dam, 1998; Schön, 1982), several questions asked about the effect of reflection on their progress, for example:

- Reflecting on my performance helped me...
- ...think about the importance of...
- ...think critically about speaking...

Finally, because of the links between autonomy, motivation, and confidence (Benson & Voller, 1997; Deci 1995; Hamilton, 2013), two questions asked about improving confidence. The questionnaire was tested for internal consistency, presenting a Cronbach alpha coefficient of .947. Table 3.5 summarizes how the questions addressed aspects of autonomy.

**Table 3.5***Relationship between the Questionnaire and Aspects of Autonomy*

| Researchers            | Category  | Question Number | Example of Wording                        |
|------------------------|---|-----------------|---|
| Holec, 1981            | Autonomy: take charge of one's own learning                   | 6               | I will use methods...                     |
| Benson, 2001, 2006     |   | 18              | ...helped me develop analytical skills... |
|                        |   | 15              | ...improved organizational skills...      |
| Holec, 1981            | Autonomy: Acting independently                                | 8               | discovered ways I could help myself...    |
| Benson, 2001, 2006;    |   | 9               | I used the materials available...         |
| Benson & Voller, 1997  |   | 10              | ...set my own goals...                    |
| Benson, 2006;          | Reflection: the heart of autonomy                             | 5               | Reflecting on my performance helped...    |
| Holec, 1979;           |   | 14              | ...think about the importance of...       |
| Little & Dam, 1998;    |   | 20              | ...think critically about speaking...     |
| Schön, 1982            |   |                 |   |
| Benson & Voller, 1997; | Confidence: Links between autonomy, motivation and confidence | 7               | ...confidence improved...                 |
| Deci, 1995;            |   | 4               | ...confidence in my speaking ability      |
| Hamilton, 2013         |   |                 |   |

The following section describes the procedures used in collecting data for Phase I.

### **3.2.2.3 Procedures**

#### **1. Ethics Clearance:**

This research received clearance from Carleton University Research Ethics Board which follows the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (see Appendix D).

#### **2. Obtaining Informed Consent:**

The study was introduced in each class near the end of the course by an individual who had no connection with the students (see Appendix E for the third party recruitment script). The teacher/researcher was not in the room at the time. The purpose of the study was explained, all questions regarding participation were answered, and a consent form was handed to each student (see Appendix F for the letter of invitation and consent form). Students indicated which parts of the study they felt comfortable with and signed a consent form indicating such. This form was

collected by the individual and kept in his office until the course was finished and all grades were published. During the courses, the teacher/researcher was not aware of who had agreed to participate in the study. Data collection did not commence until all the participants had signed consent forms stating their willingness to participate in this research, the course was completed, and all grades were published. Following is a description of the procedures used to collect data for Phase I.

### **3. Setting up the ePortfolio learning module:**

At the beginning of the term, learners were supported as they accessed the ePortfolio technology, set up the template and learned how to navigate the portfolio, which, among other activities, involved uploading videos and pasting text into text boxes. As mentioned, the template consisted of six pages, each with a different title, that was already populated with the ‘blocks’ they needed. During the term, learners populated each page with the appropriate artifacts. The first and last page housed the pre- and post-treatment test, described in the next section.

### **4. Collecting the pre- and post-treatment tests:**

During the second week of class, in the computer lab, learners were given a short paragraph (160 words) to read taken from a first year academic text (Appendix B). They reviewed the paragraph for 2 minutes and then read it once into a recording software freely available on the internet (Audacity) and posted the Mp3 file on the first page of their ePortfolios, *Initial Assessment*. At the end of the term, they read a second similar first year academic text, recorded it, and posted it on their last page, *Final Assessment*. They were asked to listen to both recordings and comment on any improvements or difficulties that they noticed. The pre- and post-treatment tests allowed learners to review and compare their performance at the beginning of the term and at the end of

the term, providing some input for their reflective analysis. The pre- and post-treatment tests were based on task in a version of a high-stakes oral language assessment (i.e., The Oral Language Test of the CAEL Assessment (Fraser & Fox, 2003; Fox & Fraser, 2001).

With regard to producing a grade, the pre- and post-treatment samples of all learners were assessed by the teacher/researcher. As mentioned, in accordance with Derwing, Munro and Thomson (2008), the rater was required to answer the question “Are you able to understand the meaning of the spoken text with relative ease?” on an 11-point rating scale with 0 = incomprehensible and 10 = No problem (Appendix B). All samples were rated by the teacher/researcher, but in order to obtain score reliability, the samples of those who agreed to participate in the study were assessed by accredited language assessors, and assessments were compared for inter-rater reliability. To maintain reliability of the pre- and post-treatment test score, all recordings were assessed at the end of the data collection period. Both the pre- and post-treatment tests were assessed at the same time in random order. In other words, assessors were blind as to whether they were assessing a pre- or post-treatment recording of the same or different participants.

##### **5. Collecting the learner questionnaire:**

Data was also collected by administering the learner questionnaire at the end of the learning module. During the last class of each term, the questionnaire was group-administered and collected by the teacher. Administering the questionnaire in this manner guaranteed that all students would provide a response, the teacher could address any confusions as they arose, and the conditions during which the questionnaire was filled out could be controlled (Brown, 2001). The next section describes how the data for Phase I of the study were analyzed.

### 3.2.2.4 Analysis

#### 1. Pre- and post-treatment test:

The pre-and post-treatment test samples of those who agreed to participate in the study were assessed by accredited language assessors, and rater assessments were compared for inter-rater reliability. Assessment results were input into SPSS version 26. Various tests were run, including the computation of frequency counts and descriptive statistics to examine central tendencies, variability, and distributions of the study variables. In order to explore the first research question, inferential statistics were used to compare the pre- and post-test results.

#### **RQ1:**

**Part A: Did the use of an ePortfolio learning module implemented in a university EAP course foster the improvement of L2 learners' speech comprehensibility?**

**Part B: If yes, how and why? If not, why not?**

The null hypothesis for this question is:

$H_0$ : There is no difference in scores between the pre- and post-treatment tests.

The alternative hypothesis is:

$H_A$ : The scores of the post-treatment test will increase as compared to the pre-treatment test scores.

As mentioned, the participants were drawn from several EAP courses taught in successive terms; therefore, a one-way between groups ANOVA was conducted to test for statistical difference between the groups. A one-way between groups ANOVA is used when there is one independent grouping variable with three or more levels or groups of different participants, and one continuous dependent variable (Pallant 2016). In the case of this study, the grouping variable is *Class* (Gr 1: Winter; Gr 2: Summer; Gr 3: Fall), and the continuous variable was scores on the pre- and post-treatment tests.

Because the data from the pre-and post-treatment tests were ordinal, having an “inherent order” (Urdan, 2010), the population from which the sample was taken was not normally distributed, and the participants represented a purposive sample, non-parametric statistics were considered most appropriate. The non-parametric alternative to a paired t-test, the Wilcoxon Signed Ranks test (Pallant, 2016), was used to see if the participants had significantly improved the scores on speech comprehensibility. Logistic regression was used to explore the predictive ability of the factors identified in the pre- and post-treatment test marking rubric as contributing to comprehensibility in an academic context.

## **2. Learner questionnaire:**

The strength and direction of the linear relationship between post-treatment test results and learners’ beliefs and attitudes (i.e., responses to the questionnaire (Appendix C) were examined through obtaining and interpreting the Pearson product moment correlation coefficient ( $r$ ) and the Spearman Rank Order correlation ( $\rho$ ) (Pallant, 2016, Urdan, 2010).

The following section describes the participants, instruments and materials, procedures, and analysis for Phase II of the study.

### **3.2.3 Phase II: Qualitative**

#### **3.2.3.1 Participants**

As mentioned, participants in this study were a convenience sample (Given, 2008) based on those students from three intact groups who volunteered to be part of the study. Thus, reflections for analysis were selected from participants who had agreed to provide their reflections. In addition, the semi-structured interview sample was selected purposively in relation to those who

had agreed to provide their reflections for analysis and also expressed an interest in interview participation.

Of the 55 participants in the study (described in section 3.2.2.1 Phase I Participants), 26 agreed to participate in all parts of the study and 20 preferred not to participate in the interviews. In addition, nine agreed only to an analysis of their pre- and post-treatment tests and questionnaires and did not feel comfortable contributing their reflections for analysis or participating in interview (see Table 3.6 for a description of participation grouping).

Table 3.6

*Participation Grouping in the Study (N=55)*

| <b>GROUP*</b> | <b>PARTICIPATION</b>   | <b>FREQUENCY</b> | <b>PERCENT</b> |
|---------------|--|------------------|----------------|
| 1             | Pre-Post- Treatment Test, Questionnaire, Reflections, Interviews                 | 26               | 48             |
| 2             | Pre-Post- Treatment Test, Questionnaire, Reflections, <b>No Interviews</b>       | 20               | 36             |
| 3             | Pre-Post- Treatment Test, Questionnaire only, <b>No Interview or Reflections</b> | 9                | 16             |
|               | Total  | 55               | 100            |

*\*Group1=participated in all parts of the study; Group 2=Did not participate in interviews; Group3=Did not participate in interviews or reflections*

*Teacher/researcher as participant*

It is important to clarify my role in the study, particularly in Phase II as I interacted more obviously with students in this qualitative phase, and therefore, could also be considered a participant. This role gave me a unique view into the goals of the learning module and the needs of the learners; however, it was necessary to plan carefully so as to avoid any negative effects on the students. As mentioned, the ePortfolio learning module had been in use for several years

before the commencement of the study. I was careful not to make any changes in the administration of the learning module or the instruments and materials used to elicit responses during the year that I collected the data for the study.

In order not to affect student performance in any way, and to ensure that they were aware of what they were agreeing to, they were not informed of the research until they had completed all aspects of the learning module. This strategy ensured that learners were not constrained in their responses to the assignments in any way, and at the same time, before agreeing to contribute their work to my research, they could review it to be sure they were comfortable with their consent choices. When the learning module was completed near the end of the term, I asked a colleague to explain the research to the students in my absence, and to ask for their consent to participate in all or part of the study. In order to assure students that participation would in no way affect their grade, I was not given access to the consent forms, nor did I begin collection or analysis of the data until after the course was completed and all grades were published.

The next section describes the materials and instruments used in Phase II data collection.

### **3.2.3.2 Materials and instruments**

- **Materials: ePortfolio learning module**

Phase II instruments consisted of written reflections and recorded interviews. As mentioned, learners created videos of themselves, at the same time running ASR software to produce a transcript of what they said. These videos and transcripts were all housed in the ePortfolio. Students also produced guided reflections on each video submission which were posted on the relevant ePortfolio page.

- **Instrument 1: Participants' reflections**

According to many theorists, as discussed in Chapter Two, reflection is at the heart of learning (Benson, 2006; Holec, 1979; Little, 2020; Little & Dam, 1998; Schön, 1982). Little (2007; 2020) maintains that the keys to developing learner autonomy are engaging the learner, in, first, completing the task, and second, reflecting on personal performance during task completion. In accordance with Little (2007; 2020), as part of the 12-week learning module, learners were required to submit four reflections on their experience and learning with regard to improving their speech comprehensibility within the context of the ePortfolio. The goal of these reflections within the context of the learning module was to encourage students to identify their strengths and weaknesses, to set goals for improvement, and to monitor their progress. According to several theorists (e.g., Benson, 2001, 2006; Deci, 1996; Holec, 1981; Little 2007; Little & Dam, 1998), learners need to be guided as they develop the skills required to manage and control their own learning. Based on this theory, a rubric was developed with the requirements for each reflection and students were given feedback in the form of a grade and comments (See Appendix G for ePortfolio assignments, evaluation rubric, and examples of reflections). They were made aware that the grade did not count towards their final mark in the module but was only to show how well they had accomplished the goals and to chart their improvement over the four reflections. As part of this study, the reflections of learners who agreed to participate in the study were coded and categorized in order to find patterns in the data related to developing autonomy. (See Appendix H for the coding scheme). Information garnered from these participants was linked back to their questionnaires.

- **Instrument 2: Semi-structured interviews**

Interviews are used to understand the meaning of experience and context for the participants (Creswell & Plano Clark, 2011; Savin-Baden & Major, 2013). According to Patton (2002), “[q]ualitative interviewing begins with the assumption that the perspective of others is meaningful, knowable, and able to be made explicit” (p. 341). In the context of this study, the interviews were conducted six to twelve months after the course was finished. The aim of the interviews was to capture, in retrospect, the experience and perceptions of those individuals who had engaged in the activities of the learning module, and particularly to ascertain if they had continued to use any of the strategies from the learning module. Interviews were selected as a useful tool because, according to Gass and Mackey (2007), they allow for “unscripted, conversational data” (p. 136) which complement questionnaires by providing added clarity and in-depth lines of questioning (Creswell & Plano Clark, 2011).

There are three main variations in qualitative interviewing techniques (Patton, 2002; Savin-Baden & Major, 2013). The most spontaneous form of interviewing is the ‘informal conversational interview,’ or the unstructured interview, which takes the form of a conversation between the researcher and the participant, often over multiple occasions, and is most useful when there are a limited number of participants and the researchers have “a deep understanding of the topic and the setting and possess a clear agenda yet remain open to revising their ideas based on their results” (Savin-Baden & Major, 2013, p. 360). The second variation is the ‘the interview guide’ or semi-structured interview, in which the researcher uses a list of issues or specific questions to guide the interview. The benefit of this format is that it ensures that the same lines of inquiry are followed with each participant, but the researcher is able to explore

interesting topics as they come up. The third variation is the ‘standardized open-ended interview’ or the structured interview. In this approach, the participant is presented with open-ended questions that have been carefully crafted before the interview. All participants are presented with the same questions and the researcher does not vary the line of questioning during the interview, which can facilitate analysis by making it easy to compare responses (Patton, 2002).

This study employed the second variation, the semi-structured or interview guide technique. The researcher wanted to ask all participants the same questions, but to be able to explore an interesting or unique topic if it was presented. The questions that formed the interview guide (See Appendix I for interview questions and transcript of the interview) were based on information from the reflections and the questionnaire. They were designed to explore in-depth participants’ feelings, and perceptions surrounding their use of the dictation software, the acts of reflecting on their performance and selecting their methods of improvement, and the experience of maintaining an electronic record of their activities over time (Abdulhamid, 2019, p. 211).

### **3.2.3.1 Procedure**

It is important to note that as part of the ePortfolio learning module, students were required to provide samples of their language at the beginning and end of the module, submit a number of reflections during the process of completing the module, and answer a questionnaire relating to their experience engaging in the module at the end of the term. Thus, three of the four data collecting instruments were already in place as part of class procedure – pre- and post-treatment tests, reflections, questionnaires; only the semi-structured interviews conducted a year later were added specifically for the purposes of the study. Phase II was focused on qualitative data (i.e., learner reflections; semi-structured interviews).

### 1. Collecting learner reflections:

During the module, learners were required to submit four reflections on their activity and progress. Figure 3.4 depicts the schedule for submitting the ePortfolio learning module artifacts.

**Figure 3.4**

*ePortfolio Schedule for Submission of Artifacts*



Learners' reflections were based on their experience of seeing and hearing themselves speaking English and produced in the following manner. As shown in Figure 3.4, at regular intervals they were required to create a video using their cell phones and at the same time record their speech on their laptop by running an ASR software freely available on the internet, such as *Speechnotes* or *Dictation*. When they finished the video, they listened to it while reading the transcript and underlined where the dictation software did not accurately transcribe what they thought they said. Figure 3.5 presents an example of a participant's notated transcript. Below the transcript he

provided the text of what he tried to say and then reflected on the reason for the inaccuracies.

Finally, he set some goals for the next video – slowing his speech; working on l/r – and identified some useful resources out of the ones provided to help guide his practice for improvement.

### Figure 3.5

*Example of Learner Transcript with Corrections and Reflection*

#### Transcript

Okay today I want to talk about my major first my major is economics about my cousin tration is international political so this measure is kind of like a combination economics and political science so I have to learn some course of economics and also there's a course of political science especially the international relationships so why I'm so angry sings This measure is programmed at the quarter and the the Palladium. No there's so many cars more than so many culture and we also me status each other so I've always swear to go to Gangnam what other country other culture so that's probably the first reason why I'm so interested in this major another reason I think he's got a discussion discuss tutorial so we discuss a question or issue about the material we read during the course and we discussed with others. And most of the students from so I really can't enjoy this conversation is Costco's what I can learn so many different things from other country I think this year I take a I started macroeconomics and the international relationship so I realized my TV off but National relationship has really how far because the first undisclosed involve a lot of reading and a lot of Isis to so oscar can make appointment with her so I approve so we talked like 4 hours the first really help me to understand this readings and how to ride a base acid and she's really cool and she is so I enjoy to study about the culture about the eastern world so I'll talk a lot on the way I think we've come from I think I would like to work today cuz I'm leaving right this is really coming out it turned out during the winter the weather is really bad it's freezing cold outside and just believe and Rising so we can you turn out to a building on this campus

mistakes

1. about my cousin [→] but my concentration 2. angry sings [→] am so interest in 3. quarter and the the Palladium [→] country and culture 4. me status [→] misunderstand 5. always swear to go to Gangnam [→] i feel really good to know more about 6. Costco [→] discussion 7. started [→] statistic 8. TV off but [→] TA of 9. has really how far [→] he is really helpful 10. Isis to so oscar [→] essays to do and I ask her 11. ride a base acid [→] write this essay 12. coming out it turned out [→] convenient especially the tunnel 13. just believe and Rising [→] because using

the issue needs to be solved

1. Talking speed is still too fast, at first the speed is ok, but the speed becomes faster Unconsciously. this issue is hard to deal with, because I'm a fast-speaker even in my own language, but I will try my best to slow my speed. I will watch the video Improving Your Pronunciation again.

2. my pronunciation is another big problem, pronunciation still needs to improve, next time I will learn the word and the pronunciation before recoding. I will watch the videos on l/r. Also, the video on Rachel's English on accent training.

As learners explored the resources, they became more aware of the problems they might have and more adept at diagnosing their issues. Before they created the next video, they reviewed their goals, and in the reflection commented on how well they had achieved their objectives. Over the course of the term, they became more familiar with the resources available on the internet to help with improving speech comprehensibility, and more comfortable using the technology to support their improvement.

In order to scaffold their reflection, I gave feedback on the quality of each reflection (Appendix G). The feedback rubric was the same for each submission: they were asked to identify specific errors in pronunciation and word choice; relate the errors to specific underlined inaccuracies in transcript; and suggests specific resources that might help them to improve. They were also asked to comment on how they addressed the issues raised in the previous submission. The reflections of learners who agreed to participate in the study were input into NVivo 12, coded, and categorized in order to find patterns in the data related to developing autonomy. (See Appendix H for the coding scheme). Information garnered from these reflections was linked back to the questionnaires.

Learners shared their portfolios with other members of the class. They were all encouraged to explore other portfolios, make comments, or use the strategies they found interesting and helpful. This process of sharing helped to improve confidence as they saw that other members of the class also had accuracy mistakes in the dictation but were able to learn from those mistakes.

## **2. Conducting semi- structured interviews:**

Several months after the course was completed, learners were invited to participate in semi-structured interviews which followed up on themes that emerged during the analysis of the reflections and questionnaires and attempted to ascertain if they were still using any of the strategies that they had used in the learning module. These interviews were conducted one-on-one using web conferencing technology. In addition, some participants responded to the interview questions by email.

The main purpose of the interviews was to extend and validate findings based on an analysis of questionnaire responses by encouraging participants to elaborate on their experiences using the dictation software and the ePortfolio. The researcher asked carefully planned open-ended questions rather than leading ones to “avoid blurting out loaded questions and to avert forcing responses into narrow categories” (Charmaz, 2006, p. 18). The researcher encouraged participants to expand on each point by asking such questions as, ‘Could you tell me a bit more about that?’ ‘How did that make you feel?’ ‘What did you think of that?’ ‘Why do you think you obtained that result?’ ‘What might you have done differently?’ When the interview was completed, the researcher repeated the main points of the interview in order to provide a validity check and ensure correctness. The interviews, which were conducted 12 months after participants completed the learning module, were recorded and transcribed using university supported software, freely available online.

## **3. Merging of Data from the two phases of the study:**

Subsequent to the completion of Phase I and Phase II, data from both phases were merged in an overall response to the research questions.

### **3.2.3.4 Analysis**

#### **1. Learner reflections:**

The reflections of learners who agreed to participate in the study were coded and categorized in order to find patterns in the data related to developing autonomy (see Appendix H). Information garnered from these participants was linked back to their questionnaires. Learner reflections were analyzed using NVivo 12, a qualitative data analysis application that allows for the collection, and analysis of unstructured or semi-structured data. Codes used in the analysis were developed based on Saldaña's (2016) hypothesis coding technique. According to Saldaña (2009), hypothesis coding is "the application of a researcher-generated, predetermined list of codes onto qualitative data specifically to assess a researcher-generated hypothesis" (p. 123). The codes and categories, developed deductively, are drawn from theory and predict what will be found in the data. In this study, drawing on relevant autonomous learning literature, particularly the writing of Benson, Dewey, Holec, and Reinders, seven categories were identified as defining the theme of what constitutes an autonomous learning context. After working with the initial coding scheme, two categories were combined and one category with two subcategories was added.

In accordance with Jones and Egley (2004), 18 reflection scripts (six selected from each cohort; see Appendix J for the selection process) were coded for the eight categories within the theme. Reflections and interview transcripts were independently coded by two researchers, with disagreements settled by a third researcher. Once the responses were coded, coding categories were reviewed, and all responses assigned to each category were re-read to check for redundancy and/or overlapping function. As a result of this re-analysis, two categories were combined into

one and one category was divided into two subcategories. Any disagreement in coding was brought forward for discussion. The Kappa Measure of Inter-rater Agreement was .91.

## **2. Semi-structured interviews:**

With regard to the semi-structured interview, four participants were interviewed twelve months after completing the learning module under study (See Appendix I for interview questions). The reasoning for this time gap was to ascertain if participants believed they were still benefitting from their experience. Three participants responded to the questions in writing through email, while one was interviewed through an online audio and web conferencing platform. The interview was recorded and transcribed using iCloud technology available through university software.

The interview protocol was based in the semi-structure interview as described by Savin-Baden and Major (2013). According to Savin-Baden and Major (2013), a semi-structured interview format allows the researcher to ask pre-set questions, which ensures consistency across interviews, but also allows for an exploration of participant's comments. In the case of this study, as three of the four participants responded by email, there was no in-depth exploration of the comments in these responses. However, the online interview with the fourth participant did allow for an exploration of the participant's unique perspective.

With regard to the analysis of the interview scripts, the deductive approach which is structured or predetermined was used. In this case, categories were based in part on coding categories used in the analysis of learner reflections. Scripts were uploaded into NVivo 12, coded, and analyzed. As mentioned, Table 3.3 (p 129) summarizes the data collection for the study, including dates, research instruments and methods of analysis.

### 3.3 Validity, trustworthiness, and meaningfulness

The quantitative instruments in the study were already piloted as part of previous EAP courses taught by the researcher. The purpose of piloting was to check the clarity of the instructions, the questionnaire items, and the time allocated for the questionnaire to be completed (Cohen, Manion & Morrison, 2000). As mentioned, the researcher's experience as an EAP teacher at a Canadian tertiary institution, a full familiarity with the context of study, findings from previous research conducted in the domain of ePortfolios, and personal contacts with current and former EAP teachers and students all played a role in enhancing the content validity of the questionnaire. As noted by Cheng (1998) the researcher's insider knowledge is important in this context.

The trustworthiness and meaningfulness of the qualitative data were established through member checking (Birt, Scott, Cavers, Campbell, & Walter, 2016), a method whereby the interview or analyzed data is returned to the participant for verification. According to Senior (2006), “[the] key aspect of qualitative research is that its objective is not to produce findings that are capable of general application, but rather to produce results that resonate” (p. 16). In other words, it is important that research findings be accepted as ‘speaking the truth’ of those who experience them, as Senior’s use of the word *resonance* refers to the quality of the research findings as being meaningful and relevant to those who experience them. Thus, the trustworthiness of the qualitative data was established by submitting findings to participants in order to collect their feedback and comments on the “clarity and comprehensiveness of evidence” (Bazeley, 2012, p. 151). This contributed to the perception of reliability and trustworthiness of the research conclusions.

Finally, triangulation was investigated in order to best understand the topic. Denzin (1978, 2009) identified four types of triangulation that can contribute to the validity of a study:

- 1 Theoretical triangulation – using multiple theoretical perspectives in interpreting a set of data
- 2 Data triangulation – using data from different sources in investigating a particular phenomenon
- 3 Method triangulation – using more than one method of data collection, which could either be ‘within-method triangulation’ such as using two different types of questionnaires, or ‘between-method triangulation’ such as using observation and interviews to assess a particular issue.
- 4 Investigator or analyst triangulation – using more than one researcher either in collecting or analyzing data. (See Raof, 2008 for discussion).

With regard to the present study, as described in section 2.2.3, theoretical frameworks of relevance to and informing this study, multiple perspectives were used in analyzing and interpreting the phenomenon under study. In addition, the advantage of using a mixed methods design was that the convergence of results from two or more methods of data collection increased the confidence in the validity and meaningfulness of the results (Tashakkori & Teddlie, 2010). Triangulation was achieved by collecting both qualitative and quantitative data from different sources, using several methods of data collection (for example, questionnaire and interviews). The results of the questionnaire analysis were used to help explain and validate the qualitative analysis of the reflections. In other words, both quantitative and qualitative phase of the study are equally informative, and the integration of the findings from the two data sets provides richer analysis of the phenomenon. Finally, data were analyzed by more than one researcher at several stages of the analysis.

In addition to triangulation, Yin, (2018, 2007) states that validity in case study research is addressed by focusing on two main tactics: the use of case study protocol, and the development of a case study database. A case study protocol documents all procedures used in collecting data, including the behaviour of the researcher as well as the questions asked (Mills, Durepos, & Wiebe, 2010). A case study database is the main method of organizing and storing data and analyses including notes, narratives, other documents, and tabular data such as quantitative results from questionnaires or tests. Yin (2018) indicates that case study researchers must organize and store raw data so that future researchers may review this data to draw their own critical conclusions. In accordance with Yin (2018, 2007) and Mills, Durepos, & Wiebe (2010), regarding this study, a database was created using SPSS 24 to record and house results from the quantitative instruments, and, in addition to careful documentation of protocol in recording and documenting the qualitative data, a database was created using NVivo 12 to record and house results from the qualitative instruments. As mentioned, using multiple sources of evidence during data collection enhances validity and trustworthiness. Thus, the use of mixed methods research design and triangulation, which involved the use of different methods to gain different perspectives on the same topic (Tashakkori & Teddlie, 1998) addressed many of the issues of validity and trustworthiness (Cohen, Manion, & Morrison, 2007; Tashakkori & Teddlie, 1998; Yin, 2018).

Four tests that are commonly used to judge the quality of quantitative research designs, construct validity, internal validity, external validity, and reliability (Yin, 2018, 1999) have also been used as a framework when judging case studies (Eisenhardt & Graebner, 2007; Gibbert, Ruigrok, & Wicki, 2008). According to Yin (2018), although these four tests are used most often

with empirical social research, they are also relevant when assessing case study research. He suggests the use of several tactics when conducting research that will provide sufficient evidence of the validity and trustworthiness of the study. In accordance with Yin (2018), these four tests were applied to the present study. Table 3.7 summarizes the suggested tactics and illustrates how they were applied in this study.

**Table 3.7**

*Case study Tactics to Satisfy Four Tests of Research Design (Adapted from Yin, 2018)*

| Test               | Case Study Tactic  | How the Tactic is addressed in this Study  |
|--------------------|--|--|
| Construct Validity | <ul style="list-style-type: none"> <li>• Use multiple sources of evidence</li> <li>• Have key informants review draft of case study report</li> </ul>    | <ul style="list-style-type: none"> <li>• Several sources of evidence were gathered: qualitative and quantitative</li> <li>• Key informants read and commented on study</li> </ul>  |
| Internal Validity  | <ul style="list-style-type: none"> <li>• Do pattern matching</li> <li>• Use grounded theory</li> <li>• Address rival explanation</li> </ul>              | <ul style="list-style-type: none"> <li>• Patterns of responses from questionnaire and reflections were matched</li> <li>• Both deductive and inductive strategies of data analysis were used</li> <li>• Null hypothesis and researcher bias was investigated</li> </ul>    |
| External Validity  | <ul style="list-style-type: none"> <li>• Use theory in single-case study</li> </ul>  | <ul style="list-style-type: none"> <li>• Theory of learner autonomy and the improvement of oral communication in the context of ePortfolios was clearly elaborated</li> </ul>  |
| Reliability        | <ul style="list-style-type: none"> <li>• Use case study protocol</li> <li>• Develop case study database</li> <li>• Maintain chain of evidence</li> </ul> | <ul style="list-style-type: none"> <li>• Case study protocol as outline in Yin, 2018 was followed</li> <li>• Databases was developed</li> <li>• Researcher's notes were catalogued</li> <li>• Evidence presented in findings was the same as evidence collected</li> </ul> |

### **3.4 In a nutshell**

This chapter presented the research philosophy, the overall research design and strategy, methods of data collection and analysis for both Phase I and Phase II, as well as reliability and ethical considerations. The study used a mixed methods (MM) research design consisting of two phases. Phase I was quantitative, using two tools for data collection, a pre- and post-treatment test of comprehensibility and a questionnaire designed to collect data on participants' beliefs and attitudes. Phase II was qualitative, employing a case study approach in order to understand how learner autonomy could be fostered in the context of the ePortfolio. Data was collected through document analysis and semi-structured interviews. Issues of reliability and trustworthiness, and ethical considerations were addressed. Chapter Four presents a detailed description of the results and a discussion of the analysis.

## CHAPTER FOUR: RESULTS AND DISCUSSION

### 4.1 Overview

As previously discussed, the purpose of this study was to investigate the impact of an ePortfolio learning module used in an EAP course at a medium-sized university. The goal of the learning module was to promote the relationship between electronic portfolios (ePortfolio), autonomy, and the improvement of L2 learners' speech comprehensibility. Success of this learning module was defined in two ways: 1) showing improvement in speech comprehensibility by comparing scores on a pre- and post-test; and 2) showing improvement in autonomous learning by exploring participants' reflections on their experience engaging in the learning module.

This chapter presents the results and discussion of this explanatory sequential Mixed Methods study in detail. Because research question 1(RQ1) focused on improvement in speech comprehensibility and research question 2 (RQ2) focused on fostering autonomy, there are two major results sections. The first section presents the results of RQ1, the quantitative findings, and the second section presents the results of RQ2, the qualitative findings. Each research question has been divided into Part A and Part B. Part A addresses the main question and Part B discusses how and why. Section 4.1 presents the results of relevance to RQ1. In order to aid the reader in navigating the information, Table 4.1 summarizes the contents of the chapter.

**Table 4.1**

*Summary of Chapter Four: Results and Discussion*

| Section  | Content   |
|--|---|
| <b>4.1 Overview</b>                                | Overview of the chapter                                   |
| <b>4.2 Phase I: RQ1 – Quantitative</b>             | 4.2.1 Part A<br>4.2.2 Part B<br>4.2.3 Summary of findings |
| <b>4.3 Phase II: RQ2 – Qualitative</b>             | 4.3.1 Part A<br>4.3.2 Part B<br>4.3.3 Summary of findings |
| <b>4.4 Merging results in relation to both RQs</b> |   |
| <b>4.4 In a nutshell</b>                           | Chapter summary   |

#### **4.2 Phase 1: RQ1 – Quantitative**

##### **4.2.1 Part A: Did the use of an ePortfolio learning module implemented in a university EAP course foster the improvement of L2 learners' speech comprehensibility?**

The first step in answering RQ1 Part A was to ascertain if there was an overall change in pre- and post-test scores in comprehensibility of all 51 participants in the study. At the beginning and ending of the learning module, participants were given a test which consisted of reading and recording an excerpt of academic text (see Appendix B). As part of the term grade, these texts were compared and any changes in performance were noted (See Appendix A for the marking rubric). For the purpose of this study, participants samples were assessed by both the teacher and an accredited oral language assessor with ample experience assessing oral language for a high-stakes oral proficiency test such as CAEL Assessment. The inter-rater reliability Kappa Measure of Agreement value was Pre-Treatment .9 and for the Post-Treatment .8, which is considered strong.

The 51 participants in this study represented a convenience sample (Given, 2008) as they were members of three advanced level EAP classes (treated as groups) taught by one teacher, and as such were not representative of the general EAP population, nor were their scores normally distributed with reference to the broader EAP population. Therefore, to begin the analysis, a non-parametric statistical test was selected. Non-parametric tests are useful when the sample does not meet the stringent assumptions of normal distribution (Pallant, 2016). In this study, the Wilcoxon matched pairs Signed Ranks Test was used to investigate change between pre- and post-treatment scores. In conducting the test, all scores were treated as an intact group and tested for change. In addition, the pre- and post-treatment test scores for each of the three groups were tested independently for change. The Wilcoxon Signed Rank Test revealed a statistically significant increase in scores following the treatment (participation in the ePortfolio learning module), indicating a medium effect size for the groups separately and a large effect size for the intact group (referencing Cohen, 1988 criteria of .1=small, .3= medium effect, and .5=large effect). Table 4.2 displays the statistics for the three groups separately and for the group as an intact whole.

**Table 4.2**

*Wilcoxon Signed Rank Test of Score Increase: Pre- and Post-Treatment Tests (N=51)*

| Group              | Z      | Sig. | Effect Size | Median Pre-treatment | Median Post-treatment |
|--------------------|--------|------|-------------|----------------------|-----------------------|
| <b>Gr1: Winter</b> | -2.887 | .004 | .2          | 6                    | 7                     |
| <b>G2: Summer</b>  | -3.945 | .000 | .4          | 6                    | 7                     |
| <b>G3: Fall</b>    | -2.828 | .005 | .3          | 7                    | 8                     |
| <b>Intact</b>      | -5.636 | .000 | .6          | 6                    | 7                     |

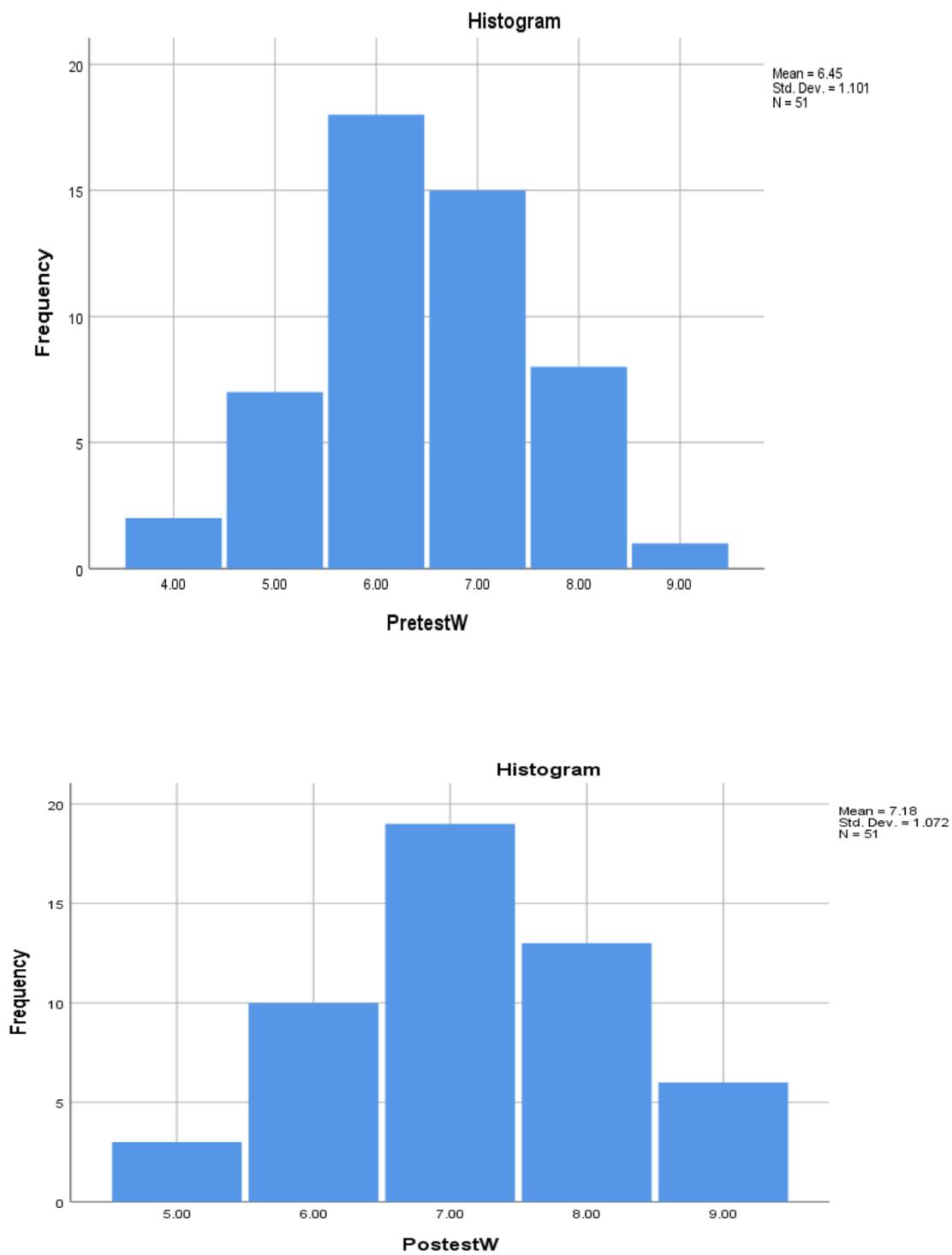
$p < .01$

The results of the Wilcoxon Signed Rank Test indicated that the ePortfolio learning module contributed to an improvement in speech comprehensibility for all groups. Although the summer group scored at a slightly lower level than the other two groups on the pre- and post-treatment tests, all groups improved, with the summer group showing the largest effect size (.4), as measured by the eta squared statistic (Cohen, 1988; Pallant, 2016). In examining the participants as an intact group, analysis indicated that the learning module had a favorable effect (.6) on speech comprehensibility as defined in this study. In addition, the group with the lowest level on the pre-treatment test (Group 2: Summer) showed the greatest improvement (or greatest reduction in incomprehensibility) of the three groups on the post-treatment test ( $Z = -3.945$ ). This suggests that the learning module may be especially beneficial for those with lower language ability.

In order to investigate further and to corroborate the results from the Wilcoxon Signed Rank Test, two parametric statistical tests were conducted: a paired sample t-test and analysis of variance (ANOVA). Both tests have more stringent requirements than the Wilcoxon Signed Rank Test, assuming normal distribution. Although the participants in this study were a truncated sample and not representative of the normal EAP population, their scores were “reasonably” normally distributed based on the actual shape of the distribution (Figure 4.1) (Pallant, 2016).

**Figure 4.1**

*Distribution for Pre- and Post Treatment Test Scores (N=51)*



A paired-sample t-test is used to compare data from one population collected on two different occasions pre- and post-treatment (Pallant, 2016). In this study, it was conducted to evaluate the impact of the ePortfolio learning module on the intact group of 51 participants' comprehensibility as indicated by the pre- and post-test scores. The paired-sample t-test indicated a significant increase in scores from the pre-test ( $M=6.145$ ,  $SD=1.1$ ) to the post-test ( $M=7.18$ ,  $SD=1.0$ ),  $t(50) = 9.1$ ,  $p < .00$  (two tailed). The mean increase in post-test scores was .725 with a 95% confidence interval ranging from .6 to .9. The eta squared statistic, which, as mentioned, can range from 0 to 1 representing the effect size of the treatment, was .6, indicating a large effect size (Cohen, 1988, p 284-7).

To explore if the ePortfolio learning module affected each group (class) in a similar fashion, a one-way between-groups analysis of variance (ANOVA) was conducted to compare scores of the pre- and post-treatment tests of the three groups of participants. One-way between-groups ANOVA is appropriate when there is one independent (grouping) variable with three or more levels (groups) and one dependent continuous variable (Pallant, 2016). There was a statistical difference at the  $p < .05$  level in pre- and post-treatment test scores among the three groups (pre-treatment test  $F(2, 48) = 4.8$ ,  $p = .016$ ; post-treatment test  $F(2, 48) = 3.9$ ,  $p = .028$ ). The effect size, calculated using eta squared, was .14 (pre-treatment test) and .1 (post-treatment test). Cohen classifies this as a small effect size (Cohen, 1988, cited in Pallant, 2016, p.236). As Table 4.3 shows, the difference between the mean scores on both the pre- and post-treatment tests was quite small.

**Table 4.3**

*Group Differences: Pre- and Post-treatment Test (N=51)*

| Group            | Statistics     | Pre-treatment Test | Post-treatment Test |
|------------------|----------------|--------------------|---------------------|
| <b>1: Winter</b> | Number         | 17                 | 17                  |
|                  | Mean           | 6.76               | 7.35                |
|                  | Std. Deviation | 1.03               | .98                 |
| <b>2: Summer</b> | Number         | 24                 | 24                  |
|                  | Mean           | 6.00               | 6.79                |
|                  | Std. Deviation | 1.02               | 1.02                |
| <b>3: Fall</b>   | Number         | 10                 | 10                  |
|                  | Mean           | 6.45               | 7.17                |
|                  | Std. Deviation | 1.10               | 1.07                |

Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 2 (Summer) was significantly different in both pre- and post-treatment tests. In other words, the overall level for Group 2 was slightly lower than the other two groups and this difference remained constant for both pre- and post-treatment tests. This indicated that although test scores for Group 2 (Summer) were significantly different from the other two groups, the treatment (participation in the ePortfolio learning module) affected all groups in a similar fashion.

The next section explores the how and why of this improvement.

#### **4.2.2 Part B: If yes, how and why? If not, why not?**

Findings discussed suggested that the ePortfolio learning module had a beneficial effect (improvement) on learners' speech comprehensibility as measured by the pre- and post-treatment tests. This section explores how and why it fostered improvement. In order to investigate exactly what contributed to improvement in learners' speech comprehensibility, first an analysis was undertaken to investigate the effect (if any) of demographic variables on the outcome (improvement); and second, an analysis was undertaken to examine the relative effect of the

factors/variables contributing to speech comprehensibility as defined by the rating scale (see Appendix A) using logistic regression.

With regard to demographic variables, sex, age, L1, and major, a chi-square test for independence (with Yates' Continuity Correction where appropriate) was selected to explore the relationship between two categorical variables, each having two or more categories. This statistical test is used to compare the observed frequencies or proportions of cases in each category with the expected value if there was no association between the two variables (Pallant, 2016). The chi-square tests indicated no significant association between improvement and each variable:

- Sex  $\chi^2(1, n = 51) = .65, p = .89$
- Age  $\chi^2(3, n = 51) = 6.8, p = .11$
- L1  $\chi^2(7, n = 51) = 6.2, p = .54$
- Major  $\chi^2(6, n = 51) = 8.4, p = .21$

Based on the results of the chi-square tests, there appeared to be no need to control for the demographic variables; therefore, further statistical analysis included all participants. Regression was used to explore variables contributing to speech comprehensibility as defined by the marking rubric.

Multiple regression is a statistical technique used to explore relationships between one continuous dependent variable and a number of independent variables. It was approached with caution in the analysis of the relationship between pre- and post-treatment test results and the predictor variables (articulation, intonation, word attack, speed, hesitation, stress, volume/degree of loudness) because the assumption of size for a reliable equation was violated (Pallant, 2016). Different authors offer differing views on the number of cases needed in relation to the number of independent variables (Pallant 2016). For example, Stevens (1996) suggests 15 participants

for each predictor and Tabachnick and Fidell (2013 p. 123) give a formula for calculating the necessary sample size ( $N > 50 + 8m$  where  $m$  = the number of independent variables). According to these authors, with seven independent variables, the sample size should be approximately 105; therefore, with only 55 participants, the sample size was not large enough to provide a reliable calculation. Moreover, Pallant (2016, p. 159) indicates that there should be some correlation between the predictor variables and the dependent variable (preferable above .3). The results of the pre-treatment test analysis indicated that none of the independent variables correlated with the dependent variable at a statistically significant level and the model was not significant ( $p = .083$ ).

The results of the post-treatment test analysis indicated that, with the exception of volume/loudness (.364) and word attack (.256), the correlations between the independent variables and dependent variable were low (between .039 and .243). Pallant also recommends not to include two variables with a correlation of .7 or more and suggests removing or combining variables with a high correlation. As there was a high correlation between speed and articulation (.827), they were combined to form a composite variable (speed/artic). Two outliers were also removed as they violated the critical chi-squared value for evaluating Mahalanobis distance values for six independent variables (Pallant, 2016, p.161).

Standard multiple regression was used to assess the ability of the six independent variables (intonation, word attack, speed/artic, hesitation, stress, volume/degree of loudness) to predict the continuous variable, post-test treatment scores. All six independent variables were entered into the model. This model explained 18.4% ( $R^2 = .184$ ) of the variance in the dependent variable (post-treatment test results); however, because the sample size was small, the Adjusted

R Square statistic (.11) was used, indicating that the model explained 11% of the variance. The results were not statistically significant ( $p = .058$ ).

To identify which of the independent variables included in the model made the strongest contribution to the prediction of the dependent variable, the beta coefficients were examined. The variable with the largest beta coefficient was word attack, however this result was not statistically significant (beta=.408  $p = .078$ ). Volume (or loudness) had the next largest beta coefficient, and this result was statistically significant (beta=.368  $p = .034$ ).

As mentioned, multiple regression is used to assess the impact of a set of predictors on a dependent variable which is measured as a continuous variable. In this case the dependent variable was the post-treatment test scores measured on a scale from zero (not comprehensible) to ten (completely comprehensible). However, another variable of interest indicated if the participants had improved or not. This was important because it was essential to assess participants' progress in relation to their starting point, as opposed to how high they scored on a particular scale. In this case, then, the dependent variable was categorical (improved/not improved) and logistic regression was the appropriated statistical technique.

Logistic regression is used to test models that predict categorical outcomes with two or more categories. In this study, based on the results of the pre- and post-treatment test scores, each participant was identified as either *improved* or *not improved*. Thus, the dependent variable was dichotomous and categorical. In addition, the rater indicated which feature had caused difficulty for the learner in the pre-treatment test and the areas of improvement in the post-treatment test (see section 2.2.3 for a detailed description of features that contribute to comprehensibility).

For example, participant #25, scored five on the Comprehensibility scale in the pre-treatment test and six in the post-treatment test. The rater indicated that the participant had problems with articulation, speed, hesitation, and volume level of the utterance in the pre-treatment test and that improvement was noted in articulation and speed in the post-treatment test. Thus, as each independent variable was identified as either *improved* or *not improved* for each participant, these variables were also dichotomous and categorical.

In order to discover which of the seven independent variables (articulation, intonation, word attack, speed, hesitation, stress, volume or degree of loudness) contributed most to learner improvement, logistic regression was selected as the best technique. The specific procedure selected was *Binary Logistic* because, according to Pallant (2016) this procedure is appropriate when the dependent variable has only two categories. A *Forced Entry Method* was used (Pallant, 2016). According to Pallant (2016), in this method, the predictive ability of the predictor variables is assessed by testing them in one block.

Before beginning the analysis, the predictor variables were checked for intercorrelations using a test of collinearity. The test showed that the variables were not strongly related to each other (tolerance values  $>.1$ ); however, it also indicated that only three of the predictor variables (articulation, speed, volume) were strongly related to the dependent variable. Frequency counts indicated small numbers in intonation (1), hesitation (6), and stress (1). Therefore, these three variables were eliminated from the final model. Thus, the final model contained four independent variables (articulation, word attack, speed, volume). This model was statistically significant,  $\chi^2(4, N = 51) = 48.078, p < .001$ , indicating that the model was able to distinguish between participants who improved and who did not improve. The model explained between

61% (Cox and Snell R square) and 86.9% (Nagelkerke R squared) of the variance in speech comprehensibility on the post-treatment test, and correctly classified 96.1% of the cases as being either *improved* or *not improved*. None of the four independent variables made a unique statistically significant contribution to the model. The strongest predictor of improvement was volume or degree of loudness, recording an odds ratio of 5.673, indicating that an individual who improved in volume, in other words, spoke more loudly, was five times more likely of achieving overall improvement.

The findings of the binary logistic regression analysis suggested that in an academic setting, volume or degree of loudness and speed may affect articulation and word attack skills. As mentioned, based on personal teaching experience, many L2 learners believe that they sound more ‘fluent’ if they speak rapidly. However, the fact is that by slowing down their speech, they may have more time to concentrate on articulation of the sounds and the pronunciation of unfamiliar words. In addition, based on personal observation, many L2 speakers tend to speak quietly, believing that their mistakes will not be so noticeable. However, in a noisy classroom, when they are trying to ask a question, or give a presentation, volume control is essential. The findings of the logistic regression analysis suggested that speaking too quietly combined with rapid speech and articulation problems may contribute to a lack of comprehensibility.

In addition to exploring results from the pre-and post-treatment tests, differences between learners’ attitudes and beliefs who improved on their pre- and post-treatment tests were investigated by examining responses to the Questionnaire through correlation analysis. Correlation analysis is used to describe the strength and direction of the linear relationship between two variables (Pallant, 2016, Urda, 2010). The relationship between all questions and

those who improved on the post-treatment test scores was examined to identify those questions that showed a significant relationship as measured by Pearson product moment correlation coefficients. The findings revealed that there was a strong negative correlation between the following questions:

- Question 4: Working with the ePortfolio gave me confidence in my speaking ability. ( $r = -.42$ ,  $N = 55$ ,  $p = <.05$ )
- Question 7: Overall my confidence improved in speaking while working with the ePortfolio. ( $r = -.48$ ,  $N = 55$ ,  $p = <.01$ )
- Question 19: I feel there are benefits to creating the ePortfolio. ( $r = -.39$ ,  $N = 55$ ,  $p = <.05$ )

Question 4 and 7 both deal with confidence and question 19 deals with perceived benefits of the ePortfolio. Results show that those individuals with lower comprehensibility scores may have gained the most confidence and benefit from engaging in the activities of the ePortfolio learning module. Conversely, the higher the comprehensibility score, the less likely for participants to indicate that they gained high levels of confidence or benefit from the learning module.

To answer the question of why some participants did not improve in their pre- and post-treatment test scores, the frequencies of pre-treatment test scores were examined in both the *improved* ( $N=36$ ) and *not improved* ( $N=15$ ) groups. On the Comprehensibility Scale of 0-10, 61% of *improved* participants scored at level six or lower, whereas only 33% of the *not improved* participants scored at level six or lower. This suggests that those who scored on the lower end of the scale were more likely to derive benefit from the ePortfolio learning module as indicated by improvement from the pre- to the post- treatment scores, and those participants who began with a fairly high comprehensibility score (level seven or above) were less likely to show improvement in the pre- and post-treatment test score. In other words, there was more room for improvement in the *improved* group. In addition, it is possible the scale, itself, was not sensitive enough to pick up changes at higher levels of oral comprehensibility.

Although the participants in the *not improved* group did not show improvement in their comprehensibility level, this does not mean that the ePortfolio learning module was not beneficial for them. In fact, in examining responses to the Questionnaire, there was no significant difference between the way these two groups responded to the questions regarding their beliefs about the use of technology and the benefits of the ePortfolio learning module. Individuals with higher levels of oral comprehensibility may have improved in other areas such as elimination of redundant fillers and non-academic language, and improvement in the use of intonation, none of which were noted in the pre- and post- treatment tests.

Finally, there were some participants who did not improve because they did not engage with the activities, or by the time they realized that there was some benefit to be gained by doing the activities, it was too late in the term to make up for the lost time. Anecdotally, some individuals voiced the belief that there was no problem with their pronunciation; that the problem resided in the software. Others indicated that it was not their job to identify problems in their oral comprehensibility; it was the teacher's job, and thus did not take advantage of the resources available to them. Others felt that they did not need to be in an EAP course at all, and, as a result, resisted taking part in the activities.

#### **4.2.3 Summary of findings for RQ1:**

**Did the use of an ePortfolio learning module implemented in a university EAP course foster the improvement of L2 learners' comprehensibility? If yes, how and why? If not, why not?**

Although it may be expected that participants' comprehensibility might improve by virtue of participating in an EAP class and in other university activities, these findings suggest that the ePortfolio learning module fostered the improvement of L2 comprehensibility within a tertiary

level EAP class equally across sex, age, language groups, and major. The main improvements were in volume, speed, articulation, and word attack skills. By experiencing themselves speaking English through watching the videos produced as part the ePortfolio learning module, they may have become more aware of how they look and sound to an observer/listener. According to comments made in their reflections, they often realized, for the first time, that they were speaking too quickly and too quietly. In addition to listening to themselves, they saw the sounds they were making transcribed by the Automatic Speech Recognition (ASR) software, and, through reflection, they may have realized that the mistakes in the transcripts represented distorted production of English sounds, sounds that in their minds they were correctly producing. Through the use of the software, reflection, engagement in the activities suggested through course materials, and practice, they may have begun to improve comprehensibility. By the end of the learning module, raters noted that participants had slowed their speech and projected their voices; thus, they were better able to pronounce the English sounds more clearly and were more successful in their attempts to pronounce unfamiliar words. The minor gain of one level on the Comprehensibility Scale represented a major accomplishment for the participants. It suggested that they may have developed a more realistic self-image which enabled them to produce a more accurate self-assessment of their needs, determine what areas they wished to work on, and select tools they most enjoyed working with to accomplish their goals. As a result, they gained confidence in their L2 speaking ability.

On the other hand, as mentioned, those who did not show improvement on the Comprehensibility Scale may have benefitted in other ways, as indicated by their responses to the Questionnaire. It is also worth pointing out that the individuals who agreed to participate in

this study were for the most part interested and engaged in the ePortfolio learning module. There were those who for one reason or another did not engage in the ePortfolio learning module, or in the class as a whole, and the majority of these individuals did not agree to be part of this study.

The next section addresses RQ2 through a qualitative analysis of participants' reflections and the semi structured interviews. As in RQ1, RQ2 has been divided into Part A and Part B.

Part A addresses the main question and Part B discusses how and why.

### **4.3 Phase II: RQ2 – Qualitative**

#### **4.3.1 Part A: Did the use of an ePortfolio learning module implemented in a university EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility?**

In order to address this question, the first step was to define the characteristics of an autonomous learning context. In accordance with Benson (2013) and Holec (1979) autonomous learning was operationalized in this study as the ability of learners to control their own learning. Drawing on Dewey (1933) and Reinders (2010), seven categories were identified as defining the theme of what constitutes an autonomous learning context. These seven categories were used in analyzing participants' reflections. The seven categories were as follows:

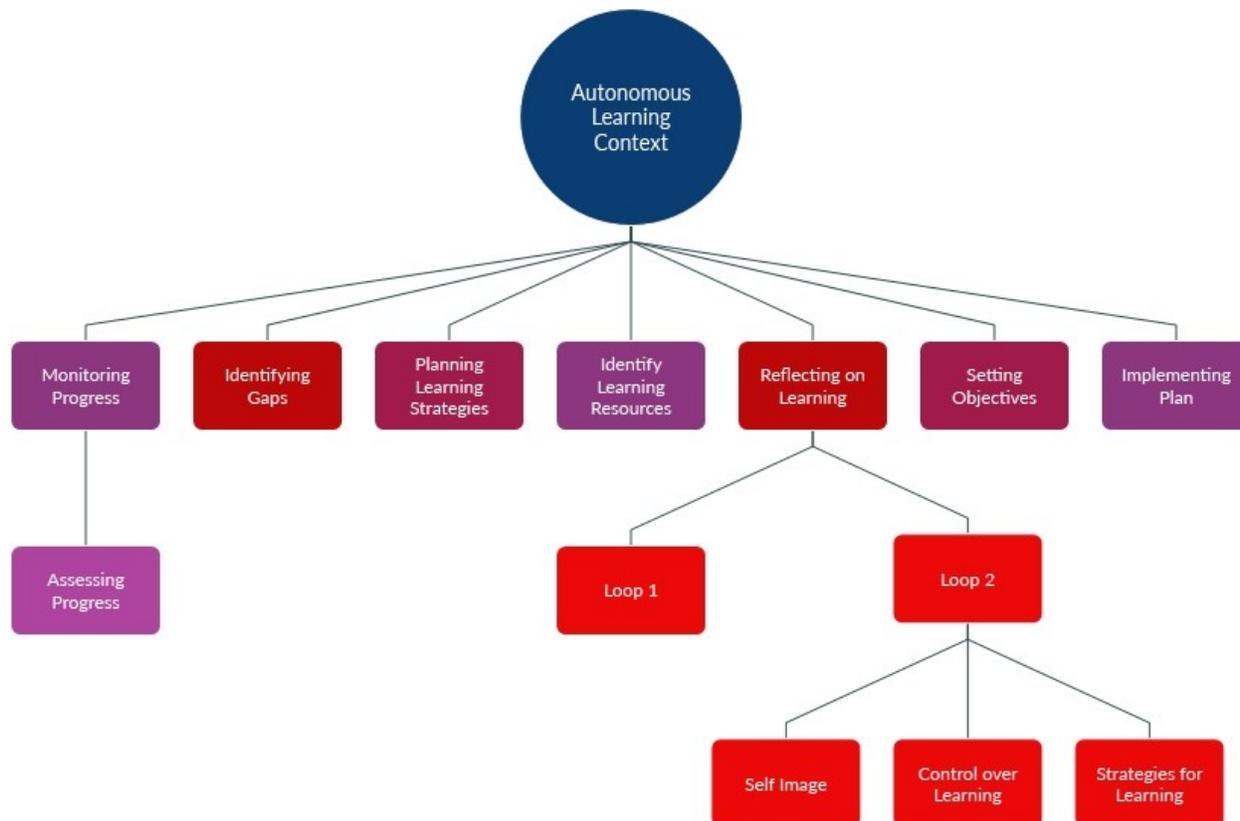
1. identifying specific issues that interfere with comprehensibility,
2. setting objectives and goals
3. planning ways to improve,
4. implementing the plan,
5. revising performance,
6. evaluating outcome, and
7. monitoring progress.

During analysis, there was some adjustment to the categories. First, categories six and seven were combined into one category, *Monitoring Progress*, due to the fact that most references had been coded to both categories, making one category redundant. Second, a final category was

added, *Reflection on Learning* because it became clear that many references contained thoughts and ideas that did not clearly fit into the other categories. After continued analysis, this category was subdivided into *Reflection on Learning Loop 1* and *Reflection on Learning Loop 2*, as there was a distinct difference noted in reflections that focused solely on the ePortfolio learning modules and reflections that focused on how the learning impacted participants' daily lives or other academic learning contexts. Further, this was in line with the theoretical framework used to inform this study (section 2.7) which theorizes two learning loops, learning loop 1 (reflection on learning within the learning module) and loop 2 (reflection on learning beyond the learning module, in other contexts). During analysis of the semi-structured interview data, Learning Loop 2 was further coded as *self-image*, *control over learning*, and *strategies for learning*. Figure 4.2 illustrates the final coding framework that was used in this study (cf. Argyris and Schön, 1974). (See Appendix H for the coding scheme.) As mentioned, these categories were then used for coding the participant reflections that were generated as part of the learning module under study. The next section presents an analysis of participants' reflections.

**Figure 4.2**

*Project Coding Framework* (Adapted from Dewey, 1933 and Reinders, 2010)



### **Analysis of participants' reflections**

Once the coding framework had been established, the next step in answering this question was to select and analyze participants reflections in order to ascertain if they engaged in the types of activities defined as aspects of an autonomous learning context. As Phase 1 findings indicated, there was no need to control for the effect of demographics, the selection of reflection scripts was based on the outcome of the Phase 1 findings with regard to *Improved* or *Not Improved*. Further, the Phase 1 findings showed that participants who improved in comprehensibility,

improved in three specific features: volume, speed, and articulation. Therefore, all scripts were divided into those who had improved on all three features, and those who had not. Six scripts were randomly selected from each of the three cohorts, three from those who had improved and three from those who had not improved (see Appendix J for a diagram of the selection process.) These 18 scripts were imported into NVivo 12 and coded using the categories identified as defining the autonomous learning context (see Appendix H) in order to discover if the use of the ePortfolio in the context of this learning module promoted autonomous learning.

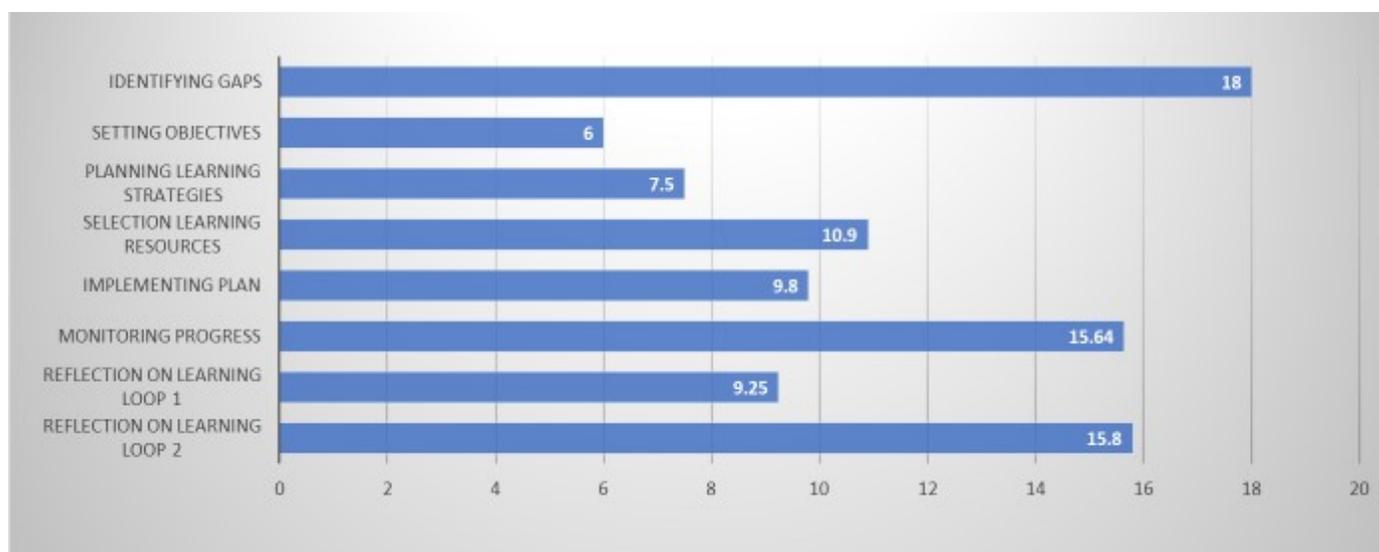
To address Part A of this question (*Did the use of an ePortfolio learning module implemented in a university EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility?*) scripts were investigated as to what percentage of coverage of text of all documents was coded to the eight categories. NVivo offers the capability of calculating how many keystrokes of the original source document are included in the coded references and reports this number as a percentage of coverage. In this study 92.89% of all source documents was coded to the eight autonomous learning codes (See Appendix H for examples of coded participant reflections). This indicated that the majority of participants' comments could be characterized as representing some aspect of autonomous learning. This finding suggested that this ePortfolio learning module offered a context that promoted autonomous learning, thus answering the first part of the research question.

Figure 4.3 displays how the total number of coded references was divided among the categories, indicating that the majority of comments were related to identifying gaps in what participants believed they had said and what the transcription software indicated they had said.

The next two largest categories were monitoring and assessing progress and reflection on second loop learning.

### Figure 4.3

*Percentage of the Reflections Coded to Each Category (N=18)*



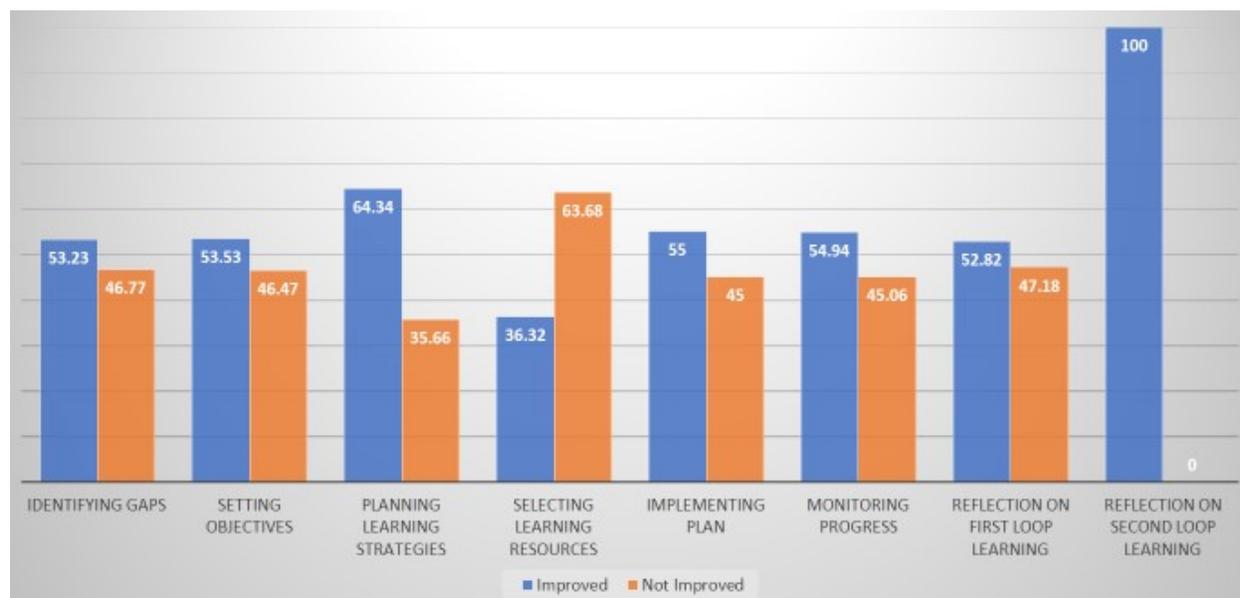
It was not surprising that most comments were directed towards identifying the gaps or problems they noticed in their pronunciation, and monitoring improvement, as these were specific tasks within the learning module. However, it was surprising that the third largest number of comments was directed toward how the awareness and improvement of their comprehensibility impacted their daily lives, for example, in other courses and in general communication, as this was not a specific task set as part of the learning module. This finding suggested an answer to the second part of the research question: If yes, how and why?

### 4.3.2 Part B: If yes, how and why? If not, why not?

In order to investigate how the ePortfolio learning module promoted autonomous learning in the context of enhancing speech comprehensibility, the performance of each group (*Improved* and *Not Improved*) was compared. As mentioned NVivo 12 has the ability to count both amount of text and complete comments. Figure 4.4 compares the amount of text that made up each coded category by group, *Improved* (blue) and *Not Improved* (orange).

**Figure 4.4**

*Improved and Not Improved: Compared by Percentage of Text Coded to Each Category (N=18)*



This chart shows that the *Improved* group's comments in general covered more text than the *Not Improved* group, except for the category, Selecting Learning Resources. The *Not Improved* group commented more on which resources they would use to address their gaps but spent less time reflecting on such issues as Setting Objectives, Planning Learning Strategies, or Monitoring Progress. This may indicate that it was easier to select from a list of options, such as a list of videos to watch, than to reflect on how the use of the videos impacted their performance.

Table 4.4 further clarifies the difference between the comments made by the *Improved* and the *Not Improved* by displaying the total number of comments coded to a specific category, and then indicating how many of the comments were made by each group. By exploring this data, it was possible to identify which categories had the strongest relationship with improvement in speech comprehensibility.

**Table 4.4**

*Number and Type of Comments by Group (N=18)*

| Categories                           | Total Number of Comments | Improved | Not Improved |
|--------------------------------------|--------------------------|----------|--------------|
| <b>Identifying Gaps</b>              | 66                       | 38       | 28           |
| <b>Setting Objectives</b>            | 60                       | 15       | 15           |
| <b>Planning Learning Strategies</b>  | 44                       | 29       | 15           |
| <b>Selecting Learning Resources</b>  | 38                       | 18       | 20           |
| <b>Implementing Plan</b>             | 18                       | 8        | 10           |
| <b>Monitoring</b>                    | 64                       | 40       | 24           |
| <b>Assessing Progress</b>            |                          |          |              |
| <b>Reflecting on Learning</b> Loop 1 | 32                       | 19       | 13           |
| Loop 2                               | 18                       | 18       | 0            |

Figure 4.3 and Table 4.4 indicate that the majority of comments were coded to the category of Identifying Gaps, Setting Objectives, and Monitoring and Assessing Progress, (66, 60, and 64 respectively). As mentioned, this was expected as tasks within the learning module directed participants to comment on these aspects of their performance. It is interesting to note that in the two categories, Identifying Gaps and Setting Objectives, the number of comments were similar in the *Improved* and *Not Improved* groups; however, almost twice as many comments from the *Improved* group (as opposed to the *Not Improved* group) were coded to the

category for Monitoring and Assessing Progress. When examining these comments, it is clear that the *Improved* group spent more time reviewing their past performance and assessing how their work impacted their present performance.

For example, Participant 1 (*Improved*) stated:

From reviewing and re-watching my video I have noticed a few strengths and weaknesses different from the last one.

He went on to state:

I also watched a video called *Improving your Pronunciation* to help me figure out different techniques I can follow to become more fluent in English. The first thing I learned is that a correct pronunciation requires control over not only the tongue, but also the mouth, throat, and even the lungs.

He indicated that he had noticed improvement:

I also had fewer mistakes in my speech dictation which reflects some improvement in pronunciation and clearness of speech.

Participant 3 (*Improved*) also spent time reviewing past performance and discussing how his work impacted his progress.

Another goal is to pronounce more correctly, I also achieve this goal. This time I am more accurate to pronounce some words. I have this improvement through watching “th”, “R”, “L” video, and some videos from Rachel’s English about vowels and consonants, such as “American vs. British English – Vowel Sounds – Pronunciation differences”, and “How to Pronounce T and D between Consonants”. These videos help me understand the correct way of pronouncing “th”, “t”, and some vowels’ pronunciation.

In contrast, Participant 14 (*Not Improved*) was vague in his assessment of progress.

After a long time of practicing, recording videos and doing reflections with them, my speech becomes clearer and more accurate.

Participant 2 (*Not Improved*) did not explain what caused the problem; he simply identified it. Compared with the previous two assignments, progress is still small but exists. There are still the same mistakes as in the previous two assignments, such as [and/on the] and [student/still dance].

These comments indicate that there was a strong relationship between monitoring and assessing progress and improvement in speech comprehensibility.

Planning Learning Strategies was the fourth largest category with 44 comments. This category showed a large discrepancy between *Improved* (29) and *Not Improved* (15), indicating that those that improved engaged in a more thoughtful approach to exactly how they might improve. An examination of the comments showed that the approach of the *Improved* group was more specific and included activities that they had not engaged in before. For example, Participant 1 (*Improved*) stated that he would try two new activities.

I feel like reading out loud would help me listen to my speech when reading, so that is one approach. I will also try to recording speech when practicing for presentations or seminars, this way I will be able to give a better presentation and highlight major issues I have when speaking.

Participant 4 (*Improved*) indicated that she would watch a selected video a second time and then went on to select another video she thought would help her.

I think it is necessary for me to watch this video again because I think I didn't get the whole tips. Before the next sample I think I will watch the video about how to suitable use accent and light tone

In contrast, Participant 2 (*Not Improved*) suggested vague activities that he was probably already involved in.

Here are some solutions to improve my speaking and my listening skills. Watching the TV and listening to the radio might assist me to hear the correct pronunciation of words and then practice them while I speak. Also, being with native speakers is a good idea as well because they would not have any issues with their pronunciation.

The most interesting discrepancy between the two groups was the category of Reflecting on Learning Loop 2. This category represented comments that participants made about learning beyond the classroom. It consisted of instances where they applied what they had learned to past

issues, issues they had in other contexts, such as other courses or their place of work, or to issues they envisioned they may have in the future. Comments in this category implied that the participant had internalized the process of learning and might draw on it in future contexts to promote his or her own understanding of the problem and its resolution. Only participants who improved made comments that were coded to this category. In other words, those individuals who did not improve, did not indicate that they transferred what they had learned beyond the context of this specific learning module. This may suggest that the key aspect of autonomous learning is the ability to transfer learning from one context to another, and the key characteristic of a context that successfully promotes autonomous learning is that it facilitates this ability.

Following are some comments that indicate these participants were able step back and look at their learning as a process that could impact their lives.

Participant 1:

When I first came to Canada, I faced some struggles understanding and pronouncing such reductions, but when I learned how to say them, I could not stop. I figured learning more about these reductions would help me understand how to pronounce them correctly, how to avoid them, and how to use them properly.

In my program, I have to learn new terms every week, so when giving a presentation that requires me to mention these new terms, I will use the dictation software to make sure I am pronouncing these new terms and new words correctly.

Participant 20:

I would rehearse my intonation and my articulations of the words through me rehearsing and accomplishing more recordings that would enhance my abilities, so whenever I start a conversation with anyone that I don't I can talk immediately without being nervous because of the problems that I have so I need to train myself as much as I can so I can improve.

Participant 6:

This was what my teacher trying to fix me long time ago.

Participant 4:

By recording myself, I will also be able to hear myself talking so I can then reflect more upon my oral skills to change my mistakes for future assignments, as well as for overall improvements for real life conversations.

These comments indicate that the participants may have been able to transfer learning from one context to another. As follow-up to this finding, semi-structured interviews were conducted with participants twelve months after completing the learning module in order to ascertain if they were still using any of the strategies. The next section will present the findings from the analysis of the semi-structured interviews.

### **Findings related to follow-up semi-structured interviews**

It is important to note that the individuals who responded to the request for an interview were those who may have continued to benefit from engagement in the ePortfolio learning module under study. They cannot be taken as representative of all the participants. Nevertheless, their comments were enlightening, indicating that for some individuals, by participating in contexts that promote autonomous learning, there could be long lasting beneficial change. As mentioned, the interviews were conducted one year after participation in the learning module under study. An email request containing the interview questions was sent to all 26 participants who had agreed to be interviewed. Three individuals responded to the questions in writing by email and a fourth agreed to an online interview, which took place on Zoom, was recorded and transcribed using the available iCloud technology. All respondents were male, two spoke Chinese as an L1, one spoke Arabic, and one spoke Russian. Three were in the high group regarding their level of English as shown by their pre- and post-test scores. and one was in the low group. All four had shown improvement in speed and volume, while one showed improvement in hesitancy and the

other three in articulation. Table 4.5 summarizes relevant information about the four participants

**Table 4.5**

*Information regarding interviewees (N=4)*

| Case ID    | L1      | Type of response  | High or Low | improved? | Areas of improvement        |
|------------|---------|-------------------|-------------|-----------|-----------------------------|
| Ali (1)    | Arabic  | Zoom Face-to face | HIGH<br>9   | YES       | Speed; Hesitation; Volume   |
| Zihao (14) | Chinese | Email             | HIGH<br>8   | YES       | Speed; Articulation; Volume |
| Kevin (35) | Chinese | Email             | LOW<br>6    | YES       | Speed; Articulation; Volume |
| Sam (48)   | Russian | Email             | HIGH<br>9   | YES       | Speed; Articulation; Volume |

The main purpose of the interview was to explore in more depth the second loop of reflection: reflection on learning (see Section 2.7, Figure 2.11). This is the second loop of Argyris and Schön's (1974) Double Loop Learning Module, a necessary part of the learning process. According to Argyris and Schön, the second learning loop, reflection on learning, leads to change in paradigm, resulting in more enlightened and effective use of learning strategies and decision-making.

There were five open ended questions (see Appendix I). The first two questions were designed to trigger their memory regarding the ePortfolio learning module, including the activities, the use of technology, and the goals of the project. The second two questions were designed to ask them to reflect on how the ePortfolio learning module might have shaped their subsequent academic experience. The fifth question asked them specifically if they had been able to apply lessons from engagement in the learning module to other areas of their academic life. Following Argyris and Schön (1974), the questions were designed to

ascertain if there had been any ongoing change or development in how they viewed their learning. Based on the Argyris and Schön's definition of Second Loop Learning in their Double Loop Learning Model (see pp 35 and 94), the questions focused on three areas: their strategies for learning which reflected Argyris and Schön's *emergent knowing*; control over learning which related to a *paradigm shift*; and self-image, which related to a *new understanding*. The texts of the interviews were entered into NVivo 12 and coded using the three codes extrapolated from Argyris and Schön's (1974) definition of the second loop of reflection. As shown in Table 4.6, The three codes were *New Strategies for Learning* which reflected an emergent knowing, *Control over Learning* which related to a paradigm shift, and *Self-Image*, which related to a new understanding.

**Table 4.6**

*Project Codes* (Adapted from Argyris and Schön's 1974 definition of Second Loop Learning)

| Argyris and Schön's Definition | Project Categories                 |
|--------------------------------|------------------------------------|
| <b>Emergent knowing</b>        | New strategies for learning        |
| <b>Paradigm shift</b>          | New Sense of Control over learning |
| <b>New Understanding</b>       | New Self Image                     |

Findings suggest that the majority of interview comments (14/33) related to a new sense of control over their learning. The remaining comments were spread approximately equally between the other two categories (see Table 4.7).

**Table 4.7**

*Number of Comments in Each Category (N=4)*

| Category                           | Number of Comments |
|------------------------------------|--------------------|
| New strategies for learning        | 10                 |
| New Sense of Control over learning | 14                 |
| New Self Image                     | 9                  |

This may indicate that these participants were most aware of the fact that they could and should control their learning experience. For example, one participant indicated that he now felt more comfortable assessing his own performance and approaching teachers to find out how he could improve:

*Ali*

A lot of people would hand in an essay. They would get a C plus and be like, "Okay, that's my best. That's as much as I can give." I didn't like that. I was like, "Okay, I got a C plus. How do I get it to B minus next time? How do I get a B plus?" I struggled a bit at the first, but now, I feel like it's got a lot better. Obviously, there's always room for improvement, but it got a lot better from when I started.

He went on to describe how he would go back into his portfolio and examine his performance for change, indicating that this gave him confidence in his learning:

When I heard me speaking, I also was able to point out more things that I don't do now, or things that was I was struggling with, and I was able to fix it.

Several comments showed that although it was challenging, participants enjoyed the sense of control they achieved by being able to direct their own learning experience, both during the learning module and later:

*Zihao*

To me, that was a lot helpful, as well. Just looking at it and correcting ourselves, and diagnose the way we talk, and the way we speak, and the way we write and everything, that was really challenging and helpful as well.

*Kevin*

Being in control of my own learning increases my confidence, but also increases the confusion of planning and organizing.

The following comment clearly shows that this participant realized that he is responsible for his own learning. In addition, it indicates that he has developed a strategy for learning that requires him to diagnose his problems and then look for a guidance in finding a solution:

*Ali*

It makes you notice who is willing to improve or not. When I look back at my portfolio and the videos I uploaded, I saw those issues. I don't know if you still remember, but almost after every class, I went back to you, and I asked you how to fix it. With that, you helped me a lot. For these students that don't go and ask for feedback, for specific feedback on a specific issue they have noticed through the portfolio, that shows you that, even if you did your best and give them all the help you can give them, they still might not improve because they don't want to. Now, with the TAs, I make sure I asked them as many questions as I can. I make sure I can get all the help I can.

Other comments indicated that the main change in their strategy for learning had to do with reflecting on their own performance and setting their own objectives.

*Kevin*

Looking at it, the portfolio helps me improve my pronunciation.

*Sam*

using the ePortfolio increases my confidence. It also offers a way to examine myself.

I had a presentation last week that I recorded. It was really helpful.

*Zihao*

I record myself just to see the way I'm speaking. I record myself, just to hear myself, saying specific words, just so I can listen to it back.

*Ali*

I noticed that, after that, when you go outside and talk to your friends, you start thinking twice before you say a word, a specific word or a sentence, so that was good. That was challenging because it takes a lot of practice, but it was really helpful for the dictation. It was helpful. It was really helpful

For us, as an ESL student, when we speak English, we do not hear the accent that we speak with, the accent that we have. It's not easy to hear the mistakes we make. It's not easy to hear how we pronounce specific letters or words or sentences, so that was challenging

*Kevin*

It certainly helps with fixing my pronunciation.

The fewest number of comments were assigned to the category of a new self image. This is perhaps the most illusive notion to identify. Here it relates to individuals feeling more self confident in their decision-making skills and in their ability to achieve success, however they define it.

*Sam*

Well, the technology, the e-portfolio was fun. It was fun to make, and it was easy to learn. It wasn't that difficult to build our own portfolio and upload our videos and expectations and everything.

*Ali*

yeah, it's amazing. It's amazing because I feel like somehow it gives you hope, and it shows you that, "Look where you were. Look where you're at now." At the same time, it actually shows you how much you improved over the years. It shows you that the practice you did was worth it.

*Zihao*

Thinking back, I feel that was a great and influential experience. Although that was not the first "speech" for me, it did form my awareness to look back and examine my representation.

*Kevin*

we should be ready to evaluate ourselves and improve ourselves and practice just ourselves in our daily life, not just inside the classroom or in front of the professor

*Ali*

Me, myself, I went back to see my reflection from earlier pages, and I noticed that every single time I either have new issues that I discovered or I have an issue that I fixed. So I felt like, session after session, that was really beneficial for us. Yeah, in terms of improvement, at the end of the day, it goes back to us on how much we practice and what we do in our daily lives

The preceding findings indicated that these participants may have been able to continue to benefit from participating in an autonomous learning context. The main change seemed to be forming a habit of reflection as one of their new learning strategies. As they used their new learning strategies in novel academic contexts, they increased their sense of control over their own learning, which in turn contributed to a new feeling of self confidence. The next section summarizes the findings for RQ2.

#### 4.3.3 Summary of findings for RQ2

**Did the use of an ePortfolio learning module implemented in a university level EAP course promote autonomous learning within the context of enhancing L2 speech comprehensibility? If yes, how and why? If not, why not?**

Based on the findings of an analysis of reflection scripts, the ePortfolio learning module promoted autonomous learning within the context of enhancing L2 speech comprehensibility in this tertiary level EAP class. After coding characteristics of an autonomous learning context (based on Benson, 2006; Dewey, 1933; Holec, 1979; Reinders, 2010) into NVivo12 and analyzing reflective scripts produced as a result of engaging in the ePortfolio learning module under study, it was found the more than 90% of the material participants wrote was represented by these autonomous learning characteristics. This indicated that the ePortfolio learning module may have fostered autonomous learning by providing a context that encouraged and enhanced it. The activities, tasks, and feedback may have exposed participants to ways of working and

thinking that guided them into taking responsibility for not only identifying their problems but also selecting methods to address them and ways of monitoring the outcome of their work.

However, the most interesting finding in this analysis was the fact that what distinguished those participants who improved from those who did not improve was their ability to take the learning beyond the context of the specific module and class to other contexts in their lives. This may provide evidence that Second Loop learning (see Figure 2.11), which incorporates Tynjälä's (2008) and , Tynjälä and Gijbels' (2012) integrative pedagogy model, Eynon and Gambino's (2017, 2018) ePortfolio pedagogy, and Argyris and Schön's (1974) double loop model of reflective learning, was the key factor in autonomous learning in this learning module.

Although the follow-up interviews consisted of only one face-to-face interview and three email responses and cannot be considered representative of all participants in the study, the findings from an analysis of their comments further supported the insights gained through the analysis of participants' reflections. Thus, possible answers to the questions 'why' and 'how' this learning module may have promoted autonomous learning is that by developing the habit of reflection, it encouraged participants to make their own decisions regarding what they wanted to improve, select the methods of improvement that best suited their learning goals, and apply these methods to other contexts in their lives where they may have similar problems. As a result, they may have gained confidence in their ability to meet similar challenges they might face in their future.

#### **4.4 In a nutshell**

The purpose of this study was to investigate the impact of an ePortfolio learning module on improving speech comprehensibility and fostering autonomous learning in L2 language learners at a tertiary level medium sized university. Because of the potential consequences of limited opportunities for developing L2 pronunciation in language programs at the university level (Derwing, 2010; Thomson, 2018; Wood, 2010), and the limited amount of time and expertise available to address this issue, the goal of the ePortfolio learning module was to encourage learners to identify their own speech comprehensibility issues and find ways that they felt would help them improve both during the ESL class and beyond as they moved through their chosen academic program. Based on the findings of this research, the ePortfolio learning module had to some degree, a positive impact on learners' speech comprehensibility and the development of skills and strategies that may support autonomous learning.

The next chapter merges the findings from Phase I and Phase II of the study to provide an overall interpretation of the phenomena.

## CHAPTER FIVE: MERGING THE DATA: WHAT DOES IT ALL MEAN?

### 5.1 Overview

This chapter brings together the findings from Phase I and Phase II of the study to form a coherent picture of the impact the ePortfolio learning module on L2 learners in my EAP advanced level course. Following a brief review of the purpose and findings of the research, I will address several questions that guided me in clarifying the meaning of the study as a whole.

### 5.2 Review of the purpose and findings of the study

The purpose of undertaking this research was to assess the impact of an ePortfolio learning module introduced into an advanced level EAP class at a medium sized Canadian university. The learning module was designed to foster autonomous learning in the improvement of speech comprehensibility within the context of an electronic portfolio. The main reason for introducing this learning module into the EAP curriculum was to fill the perceived gap between the observed need of L2 students to improve their speech comprehensibility and the amount of time and expertise available in the course curriculum to address the issue. It is worth restating that in this research, *speech comprehensibility* refers to the level of difficulty the listener has in understanding the meaning of the L2 learner's utterance (Munro and Derwing, 1995a).

This research provides evidence that the ePortfolio learning module introduced into the advanced level EAP classes fostered autonomous learning in the context of enhancing L2 speech comprehensibility. Through participation in this 12 week ePortfolio learning module, some L2 learners were able to develop strategies and perceptions that encouraged them to pursue their learning more autonomously. In other words, the ePortfolio learning module was somewhat successful in filling the instructional gap between what participants needed with regard to improving their speech comprehensibility and the time available in a tertiary level EAP course to

devote to this aspect of language learning. It did this by presenting participants with a learning context that fostered autonomous learning in this area of study.

### **5.3 Questions that helped clarify what it all means**

#### ***5.3.1 Did the study answer the research questions?***

Two research questions guided the study. The first question asked if the ePortfolio learning module improved participants' L2 speech comprehensibility, and the second asked if the ePortfolio learning module enhanced autonomous learning in the context of improving speech comprehensibility. Based on the findings from analysis of the quantitative and qualitative data, it can be concluded that the use of the ePortfolio learning module promoted the habit of reflection which had a positive effect on participants' speech comprehensibility and autonomous learning as measured in this study. The findings indicated that those participants who reflected on their performance were better able to select useful and engaging resources as they attempted to improve their speech comprehensibility; in other words, they were better able to guide their own learning. In addition, some participants continued to apply the activity of reflection as a new learning strategy to other academic contexts over time.

With respect to speech comprehensibility, by encouraging learners to become more familiar with the way they look and sound through video recording themselves speaking on various topics they might encounter in academic contexts, they were able to identify issues that they found problematic and find resources to help improve. The greatest improvement was in slowing the speed of their speech, thus allowing for more processing time resulting in improved pronunciation. Findings also suggested that the lower the comprehensibility level of the participant, the more likely that the ePortfolio learning module might have a positive impact. This may be related to the scale used, in that it did not identify certain discrete sounds that a

higher level learner may have been working on. It may also be related to the possibility that the main issue for lower comprehensibility level participants was that they spoke too quickly, and this was a fairly easy issue to correct.

With respect to autonomous learning, findings suggested that shifts in the roles of teacher and learner and in teaching and learning goals may have helped to create an autonomous learning context that in turn may have fostered improvement in speech comprehensibility. Activities, tasks, and feedback that were part of the ePortfolio learning module may have guided participants into ways of working and thinking that encouraged them to take responsibility for, not only identifying their problems, but also selecting methods to address them and ways of monitoring the outcome of their work. Findings also suggested that those participants who were able to transfer their autonomous learning skills to other academic contexts were most likely to improve in their learning tasks in the ePortfolio and feel greater overall confidence in their ability to achieve academic success. This supports the integrative pedagogy of both Tynjälä (2008, 2012) and Eynon and Gambino (2017, 2018), and the theoretical views of researchers such as Argyris, Schön and Dewey, who have suggested that key to successful learning is the ability to apply reflective skills across contexts.

### ***5.3.2 Is the teacher's role important in implementing the learning module?***

It is true that there are learners who are “inherently proactive and eager to adopt an autonomous learning approach, regardless of the pedagogy used” (Geoff Lawrence, personal communication, October, 2021). However, the purpose of this study was to evaluate the impact of the ePortfolio learning module in helping participants to foster autonomous learning skills in the context of improving oral comprehensibility. For some individuals, this was an easy task

once they understood how to use the technology. For others, who were less inclined to take charge of their own learning, it was more challenging. Findings from the study suggested that the teacher played a significant role in guiding learners to take on more responsibility in improving speech comprehensibility, and that by assuming more responsibility in the learning process, learners increased confidence in their ability to successfully undertake study in other academic contexts. Thus, with teacher guidance, the ePortfolio learning module was found to be an effective method of filling the instructional gap in promoting L2 speech comprehensibility by fostering autonomous learning in an EAP course at a tertiary academic level. These findings support the findings of other researchers such as Kruk (2012) and McCrocklin (2014) who reported that if teachers support and nurture the development of learner autonomy and focus on a targeted use of technology, learners could improve their speech comprehensibility in specific ways.

### ***5.3.3 How did participants interact with the technology?***

An important aspect to be addressed is how participants interacted with the context and technology of the ePortfolio. I would have to disagree with Pensky (2001a) and Dede (2005) who described the 21<sup>st</sup> century learners as *digital natives*, indicating that they expected to participate in designing their learning experiences (see section 2.2.1.2.3, *Electronic portfolios*). The participants of this study often found dealing with the context and technology of the ePortfolio challenging and sometimes bewildering. They might have been familiar with Facebook or Twitter or some other social network, but not all of them were comfortable nor were they intuitively adept at understanding the use of this new technology. Often, it took a lot of time to help each participant to engage with the requirements of creating an ePortfolio and populating the pages with videos and texts. It was also time consuming to introduce and practice the use of

automatic speech recording (ASR) to the point that it became a useful tool within the activity. It became clear that the basic requirements of being able to read and follow written instructions still apply whether the individual is a *neomillennial digital native* or a retired senior attempting to change the password on a yahoo account. However, in the final analysis, for some of the participants of this study, the experience of using the ePortfolio and the ASR software, although intimidating at first, ultimately became a positive one. They gained a sense of assurance in mastering the technology. In addition, the idea of returning to previous work to review their improvement began to intrigue some of the participants and provided a sense of accomplishment and confidence in their learning ability.

#### ***5.3.4 Did participants value autonomy?***

In the same vein, not all participants in the study felt that the most valuable use of their time was diagnosing their own problems and selecting methods of addressing them. Some participants continued to feel that this was the teacher's job. They did not develop confidence in their ability to direct their own learning, nor did they indicate that understanding the nature of reflection was a valuable academic skill. For these participants, the goal was simply to do as little as possible to complete the learning module, which would allow them to pass the course. Thus, observations by researchers such as Pensky and Dede regarding the expectation of the 21<sup>st</sup> century learner to participate in designing their own learning were not fully borne out by the actions of some participants in this study, and the conclusion of researchers such as Dewey, Schön, and Boud that learners had to be guided to engage in reflective learning was reinforced. In guiding them, it is difficult to create a balance between what Boud and Walker (1998, p. 194) called *recipe following* (see section 2.2.2.2.), where reflection is reduced to answering a prescribed set of

questions, and does not tap into the type of reflecting that promotes. The fact that, even with guidance, not all participants in this study were able to take advantage of the context to develop aspects of autonomous learning indicates that aspects of the learning module may be improved.

### ***5.3.5 Were my expectations met regarding the impact of the ePortfolio leaning module?***

Regarding the specific results of the study, in some ways they exceeded my expectations. In Section 2.2.3.3 *Integrative and ePortfolio pedagogy inform the ePortfolio learning module*, I listed six presuppositions I held regarding the impact of the ePortfolio learning module (Figure 2.11). I expected that there would be improvement in participants' sense of confidence, use of digital tools, noticing habitual speech errors, sense of autonomy, speech comprehensibility, and articulation. I believe that findings of the study have supported my assumptions. For example, I had hoped to find quantitative evidence that the ePortfolio learning module helped to improve speech comprehensibility, which I did. However, I did not expect to see so clearly in the data which characteristics of speech comprehensibility contributed to this improvement. Findings from an analysis of the data indicated that volume, speed, and articulation were the three characteristics of speech comprehensibility that were significantly related to improved post-treatment test scores in this group. This is a very hopeful finding. Many second language teachers have neither the time nor the expertise to spend on pronunciation diagnosis and treatment. However, these findings may suggest that in an academic context if students can be trained to speak at a slower rate it may give time for clearer articulation and better overall language processing. If this can be combined with speaking loudly enough that all individuals can hear clearly, then the chances of them being more comprehensible to the listener, including the L2 listener, may improve.

A second most interesting finding in this study was the fact that there seemed to be a measurable link between the ability to reflect across contexts, or *Reflection on Second Loop Learning* (see section 2.2.2.2.3 *Reinvigorating the role of reflection in learning*) and improvement in speech comprehensibility. According to the findings from the analysis of reflective comments, although all participants made comments that could be attributed to several categories identified as features of an autonomous learning context, only those participants who improved on their post-treatment test scores made comments that could be attributed to the *Reflection on Second Loop Learning* category. In other words, being able to reflect on learning across academic contexts and in daily life, was statistically related to improvement.

This finding is important because it reinforces the idea that reflection is at the heart of autonomous learning and has a positive effect on achievement. At the same time, reflection is a skill or habit that can be nurtured in any context and once developed creates a bridge that links all learning contexts. This is important because it indicates that an essential aspect of teaching may be to encourage learners to think about the broader picture, and to apply newly gained understandings to contexts beyond the particular course to include the discipline as a whole. This is facilitated and reinforced through the use of an ePortfolio that may be developed and reflected on throughout a learner's academic career, or simply within a specific language training program. It supports the view put forward by Eynon and Gambino (2017) that the theoretical framework of the ePortfolio provides an integrative pedagogy that creates a physical context where reflection is the key to successful achievement. This is in line with researchers such as Gathercoal (2007), Gray, (2008), Lewis (2017), and Peet (2001) who suggest that the ePortfolio may be particularly effective in developing critical thinkers who are adaptive, flexible, and

reflective – attributes essential in the 21<sup>st</sup> century workplace (see section 2.2.1.2.3 *Electronic portfolios*).

On the other hand, I was disappointed that of the 26 participants who originally agreed to an interview, I was only able to establish communication with four of them. Of the four participants, only one indicated that he had been expected to use an ePortfolio in any of his classes. Also, only one indicated that he had consistently used strategies such as recording a presentation before delivering it in class. This may indicate that within an institution, learners would benefit from a more systematic approach to using the ePortfolio as it promotes reflection on learning across academic contexts. Although it is not within the scope of this study to understand why there is not a more consistent approach to the uptake of ePortfolio tools across this university, it may be of interest in terms of further study.

One reason may be that there are a variety of social media tools that can now be used in the virtual learning environment space such as Google, Weebly, and Wix. In fact, one participant in this study indicated that he was asked to use an ePortfolio developed on Google sites in another class, even though his university fully supports a different web-based ePortfolio management system and has experts on site ready to troubleshoot any problem that might arise. Clearly, many teachers see the contributions these different tools can make to learning; however, this also serves to prevent an institutional consensus regarding which tools to use. As a result, both learners and teachers are often inundated with a variety of online tools making it difficult to become proficient with any specific one and contributing to a kind of ‘technology fatigue’ (Lee, Son & Kim, 2016).

### ***5.3.6 How might the findings impact language programs?***

It may be a worthwhile endeavor for a language program to include the use of an ePortfolio at all levels. If teachers could agree on a particular system to be used at all levels of the program, it would give learners the opportunity, at the very least, to monitor their progress from level to level. Teachers could, for example, ask learners to review their performance from previous semesters and analyze their progress. It would also provide for the development of an online community that could be used in many ways to support integration and connect with other repositories and key social media sites. At the tertiary level, most universities allow students to retain access to their ePortfolios for some time after graduation and some universities allow access for life. This means that, as digital credentialing becomes more important, it can be used for career development. In any case, just looking at the benefits of maintaining a record of development for language learning, the ePortfolio seems to present an invaluable learning experience.

In addition, teachers in ESL/EAP programs may find it helpful to review the available resources on the internet for improving pronunciation and consider integrating them into their course curriculum. There are a variety of resources that provide information and exercises for learners who need to develop speech comprehensibility. Moreover, there are readily available programs which provide individual diagnosis and remediation for a very reasonable price if learners feel inclined. It is no longer necessary for a teacher to be an expert in pronunciation to provide real help to those learners who struggle with incomprehensible oral production.

### *5.3.7 In my view, what are the contributions of the study?*

With regard to the theoretical contributions of this study, it is clear that teachers have an important role to play in helping learners become more autonomous. The study showed that the development of autonomous learning is a process that requires effort from both teachers and learners (see for example, Benson, 2006; Cotterall, 1995; Cotteral & Crabbe, 2008). Teachers can help learners by providing autonomous learning contexts with on going guidance and support where learners can practice their newly developing skills. It also showed that in order for the guidance and support to result in more autonomous learning, there needs to be a change in learners' perception of learning, that is, learners need to be able to reflect on their own learning process and extrapolate from the particular context to other contexts. Thus this aspect of encouraging second loop learning, as it was called in this study, needs to be an important part of the guidance and support provided by teachers.

With regard to the pedagogical contributions, this study showed that classroom activities can help learners develop the ability and reflective habits that foster autonomous learning. To support this, it is important that the goals and objectives of the activity are clear and revisited often. It also showed that all learners need time and practice and some learners need more scaffolding than others. Therefore, providing different contexts that require the practice of the same skills is helpful. In addition, providing models of the type of reflective activity that promote autonomous learning is also helpful and this is possible within the context of the ePortfolio because learners share their work with their classmates.

I believe that one of the main contributions of this study is to show how digital tools such as automatic voice recording, the ePortfolio, and internet resources, if skillfully used, can help in addressing the serious gap in EAP instruction that results in ignoring or not addressing the needs

of many international students with regard to developing speech comprehensibility. There is no doubt that improving speech comprehensibility requires consistent targeted work on the part of the learner. This obviously can be addressed by a trained expert over a period of time, but many EAP teachers do not have this training, nor do they have the time. This study showed that with some effort in guiding the learners to reflect on their own performance, it is possible to, at the least, provide them with tools should they decide to use them, and at the most, help them take responsibility for developing a level of speech comprehensibility that allows them to participate more fully in various academic contexts such as group work, seminar discussions, conference presentations, and oral exams.

It is also important to note that I examined this specific learning experience from an insider perspective, presenting the research “as a form of reflective practice whereby education for autonomy is planned, enacted, and evaluated through situated inquiry” (Raya & Vieira, 2021, p. 252). As a result, this research contributes to our understanding of *autonomy-in-practice* where theory, practice, and inquiry are integrated to make sense of the reality of the classroom and classroom activities. In this sense, this research may provide evidence of the effectiveness of particular strategies, how these strategies impact both learners and teachers, and the conditions that may support or hinder the development of autonomous learning (Raya & Vieira, 2021). It also emphasizes the importance of the role of teachers who undertake this type of *self-study research*, as contributing to a body of knowledge that supports change and growth in their own institutions.

## CHAPTER SIX: CONCLUSION

### 6.1 Overview

The purpose of undertaking this research was to assess the impact of an ePortfolio learning module on learners in an advanced EAP class at a medium sized Canadian university. The stated learning objective of the module was to improve *speech comprehensibility*. The reason for introducing this learning module into the EAP curriculum was to fill a gap I perceived between the needs of L2 students to improve their speech comprehensibility and the amount of time and expertise available to address the issue. The findings of the research suggest that the ePortfolio learning module was successful in filling the gap between the perceived need of L2 participants for support in developing speech comprehensibility and the limited amount of time available in the curriculum to address this need. It also had the added benefit of encouraging autonomous learning skills that learners reported were, to some extent, transferred to other academic learning contexts.

Findings from Phase I of the study suggested that speech comprehensibility improved through better learner management of volume or degree of loudness, speed, articulation, and word attack skills and that the lower the comprehensibility level, the greater the improvement. Findings from Phase II of the study indicated that the more participants engaged with autonomous learning skills and strategies, the greater the improvement in speech comprehensibility. Further, participants who improved the most were those who also applied the autonomous learning skills to other academic contexts. The following section presents some limitations of the study.

## **6.2. Limitations of the study**

There are several limitations to this study that should be noted. One important limitation to this study is the dual role of the researcher, who also functioned as the teacher. It is often difficult to balance this role duality (DeLyser, 2001; Denzin, 1998a, 1998b; Hammersley, 1993). Research is always value-laden. According to Zyphur and Pierides, (2020), “values are embedded in every aspect of quantitative methods, including ‘observations,’ ‘facts,’ and notions of ‘objectivity’” (p. 1). This is equally true of qualitative research methods. As an “insider,” there is a risk that the researcher was unaware of bias when collecting and analyzing data (Unluer, 1993).

A second important limitation of the study was that it concerned one teacher, one language level, and one specific context. Thus, although the findings were meaningful, they were not generalizable.

A third limitation of the study is that because of the necessity of collecting enough data for the quantitative phase of the study, the format of the ePortfolio learning module remained rigid over with the three classes. This meant that it was not adjusted to take into consideration lessons learned from previous administrations of the learning module. Thus, the flexibility offered by the ePortfolio context was not fully utilized.

## **6.3 Future directions and recommendations**

With regard to future directions in this area of research, it may be fruitful for there to be a separation of the role of researcher and teacher. It might be useful to form a collaboration between two or more teachers who implement similar learning modules in their classes and could review and analyze each other’s data. In this way, the study would continue to benefit from the insights of the teachers, but the risk of bias might be reduced.

A second line of research that might prove fruitful is to implement the ePortfolio learning module at various levels, with different teachers, in different contexts. This research was conducted with participants in the advanced level of an EAP program in a medium sized university. Findings suggested that the greatest improvement was among those with lower levels of comprehensibility, therefore, introducing the ePortfolio at lower levels may prove useful in language programs. Also, by implementing the learning module under the guidance of different teachers, their insights into how learners interact with the ePortfolio learning module and how the module could be developed and enhanced may prove very valuable. This would also allow for a clearer understanding of the role of reflection in fostering autonomous learning in the context of improving speech comprehensibility within the digital repository of an ePortfolio across populations with different levels of language ability and different teachers.

As mentioned, over the 12 months that the study was conducted, the format of the learning module remained rigid. Based on observations, there are a number of recommendations to increase the effectiveness of the learning module. The first recommendation has to do with tracking the amount of time learners spend on the activities in the learning module. I did not do this, but in future, it would be useful to help learners manage their time. A question probing the amount of time they spent, and their perception of its usefulness could be added to the Questionnaire. It is important for teachers to remain cognizant of the fact that their course is only one of many responsibilities that learners have and effective time management on both the part of the teacher and the learner is essential. One suggestion to make it easier and less time consuming for learners to negotiate the requirements of the module is to make the learning module self-contained. In other words, all assignments, instructions, and resources could be

housed within the ePortfolio, rather than posting them on some other learning platform. In addition, incorporating recorded/videoed teacher instructions and exemplars for learners to study would also increase the efficiency of implementing the learning module. By making these modifications, the learning module could be manipulated to function using less teacher time but could still support learning in a variety of ways.

A final recommendation for further research is to include both quantitative and qualitative data collection methods. I selected the mixed methods research design as the one that would best address the questions I was asking. I needed quantitative data to find out if the learning module resulted in improvement in speech comprehensibility, and exactly what kind of improvement, if any, and for whom. I was able to collect data pertaining to this question through pre-and post-treatment tests. I also needed information about participants' perceptions, practices, and concerns regarding the use of the ePortfolio, which I collected through a questionnaire. With this information I could then look more clearly at qualitative data (i.e., reflections and semi-structured interview texts), providing an opportunity to probe more deeply into participants' perceptions and strategies. The dual lens of quantitative and qualitative data collection allowed me to see different aspects of the phenomena, which taken together addressed my research questions more richly than one or other method could have provided on its own.

#### **6.4 Final thoughts**

The main argument for developing the ePortfolio learning module was that I believed that we, as tertiary level EAP teachers, were not addressing the needs of our learners by not dealing with their speech comprehensibility issues. The main reason for this research was to assess the impact of the ePortfolio learning module in addressing these needs, as well as fostering autonomous

learning, so that learners could continue to improve speech comprehensibility throughout their academic career. I learned several important lessons during this research.

I learned that clearly articulating learning goals and objectives is a reiterative process. In other words, goals and objectives may shift and change as the learners themselves change. Objectives often need to be revisited, redefined, realigned with learner needs, or just reworded, depending on the individuals involved. I also learned that it is possible to fill the gap between what learners need regarding their speech comprehensibility and what we provide in the tertiary level EAP classroom, but it takes time and thoughtful reflection on the part of everyone involved. Moreover, I became aware of the undeniable role that reflection plays in education at all levels.

Reflecting on my own practice through this research has been invaluable in many ways: clarifying my own objectives, realigning my goals with those of my students, sorting out and coming to an understanding of the factors at play in the classroom that feed into successful (or unsuccessful) teaching and learning. Thus, my experience resonated with Schön's (1982) expressed ideology of turning *tacit knowing-in-action* into *reflection-in-action* or *reflection-in-practice*, where principled reflection on my professional activity brought clarity to my own philosophy as a teacher and the ways in which my philosophy impacted my teaching goals and ultimately my students. What began as a simple question about the effectiveness of a learning module turned into a re-evaluation of my teaching and the role I and all of us play in our international students' lives.

Finally, I learned that regardless of the advances in technology, the teacher's role in teaching and learning remains pivotal in supporting learners in their search for useful strategies that promote learning across contexts and help them prepare for future challenges.

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## B Texts for pre and post treatment test

These texts are samples of texts used as part of the Pre- and Post-Treatment Test. The samples were selected from course readings which had been submitted for copyright permission. Only the performance assessments were used as part of the research study, not the samples themselves.

Huang, L. (2010). *Academic Communication Skills*. New York: University Press of America, Inc.

### Sample 1:

Cultural values vary considerably. A culture is a shared system of symbols, beliefs, attitudes, values, expectations, and norms for behavior. Members of a culture may share similar assumptions about how people should think, behave, and communicate. When speaking with someone from another culture, you might encode messages based on your own assumptions, which reside in the implicit layer of your own culture, whereas your listener may decode your messages according to assumptions that reside in the implicit layer of his/her culture. Many international students come from educational environments that differ from those in North America. Differences in academic traditions mean that many students have very different expectations about how learners are supposed to behave, and also about how teachers should behave. Where two sets of expectations intersect, linguistic and paralinguistic cues can have vastly different meanings; these differences may create varied responses when people use them in cross-cultural contexts, and opportunities for misunderstandings and miscommunications may arise. (p. 2)

### Sample 2

One way to understand intercultural communication (i.e., communication that occurs in encounters between and among speakers from different cultural backgrounds) (Scollon & Scollon, 2001; Spencer-Oatey, 2000) is to consider the cultural communication preferences that various researchers have examined in their efforts to link cultural norms to communication and linguistic patterns. Anthropologist Edward T. Hall (1976), for example, distinguished between low context and high-context cultures to describe cultural differences in communication patterns. Context is related to whether what is being communicated is inherent, contained, or embedded in the setting, and what is embedded is already understood or assumed by the speakers involved (i.e., high context). Low context communication occurs when speakers must communicate most of the information explicitly through spoken exchanges of ideas, thoughts, and opinions. According to Hall and others, individuals from low-context cultures, including those in North America, German-speaking countries, and Scandinavian countries, tend to be verbally explicit and rely less on shared assumptions and implicit information that are present in the context of a speaking encounter or event. (p. 2)

Alderson, C. (1984) Reading in a foreign language: A reading problem or a language problem? In C. Alderson and A. Urquhart (eds.), Reading in a Foreign Language. New York: Longman Group Ltd. (pp 3-18)

### Sample 3

In many parts of the world a reading knowledge of a foreign language is often important to academic studies, professional success, and personal development. This is particularly true of English as so much professional, technical and scientific literature is published in English today. In fact, it is frequently the case that the ability to read in English is required of students by their subject departments, often assessed by a test of reading comprehension. A reading ability is often all that is needed by learners of English as a Foreign Language (EFL), as well as of other foreign languages. (This is not to say that students/learners do not want to speak or write English as well.) Yet despite this specific need for the foreign language, it is the common experience, at least of EFL teachers, that most students fail to learn to read adequately in the foreign language. Very frequently, students reading in a foreign language seem to read with less understanding than one might expect them to have, and to read considerably slower than they reportedly read in their first language. (p 3)

### Sample 4

Results of research also support the view that reading in a language which is not the learner's first language is a source of considerable difficulty. MacNamara (1970) found that the Irish-English bilingual students he studied were reading in their weaker language (in this case, Irish) at a slower rate and with lower comprehension than students reading in their first language. Besides taking considerably longer to read their second language, students who understood the words and structures of the texts under study (their understanding of the words and structures was tested separately) were still unable to understand what they read in the second language as well as in their first language. In a further study reported in the same paper, this time with French-English bilinguals, MacNamara found certain differences between reading in the native language and reading in a second language – in the rate at which individual words are interpreted, in the rate at which syntactic structures are interpreted, and in ability to anticipate the sequence of words' (an ability which MacNamara takes to be related to syntactic knowledge). (p3-4)

## C Questionnaire

### How did you like using the ePortfolio?

First Language \_\_\_\_\_ Gender \_\_\_\_\_ Age \_\_ 18-22 \_\_ 22-25 \_\_ 25-30 \_\_ 30-35 \_\_ 35+

What is your major? \_\_\_\_\_ How long have you been in Canada? \_\_\_\_\_

Answer the following questions using 1-6 Likert scale (1= completely disagree, 6= completely agree).

|  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|
| 1. I enjoyed using the ePortfolio.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. It was easy to learn how to use the technology of the ePortfolio  | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. The dictation software was very useful in helping me identify problems with my pronunciation.                               | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Working with the ePortfolio gave me confidence in my speaking ability.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Reflecting on my performance helped me understand how to improve my pronunciation.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I will use the methods of video recording my presentations and transcribing it to help me prepare in other courses.         | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Overall, my confidence improved in speaking while working with the ePortfolio   | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. While using the ePortfolio, I discovered ways that I could help myself improve my pronunciation and confidence in speaking. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. I used the materials provided in the ePortfolio to improve my pronunciation.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. I was able to set my own goals for improving my pronunciation using the ePortfolio.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. I found it useful to see progressive videos of myself speaking English housed on the ePortfolio.                           | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. I improved at being able to identify my strengths and weaknesses in speaking using the ePortfolio.                         | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Creating the ePortfolio encouraged me to think about what I have been learning.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Creating the ePortfolio encouraged me to think about the importance of academic speaking.                                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Creating the ePortfolio helped me to develop organizational skills.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Creating the ePortfolio improved my ability to follow written instructions in English.                                     | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. Creating the ePortfolio improved my ability to follow spoken instructions in English (in videos).                          | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Creating the ePortfolio helped me to develop analytical skills.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. I feel there are benefits to creating an ePortfolio.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. The ePortfolio helped me to think critically about speaking and how to improve it,   | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. I felt supported during the ePortfolio creation process.   | 1 | 2 | 3 | 4 | 5 | 6 |

|  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|
| 22. The ePortfolio manual was a useful resource.     | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. I did NOT have difficulties writing reflections. | 1 | 2 | 3 | 4 | 5 | 6 |

## D Certification of institutional ethics clearance



Office of Research Ethics  
 503 Robertson Hall | 1125  
 Colonel By Drive Ottawa,  
 Ontario K1S 5B6  
 613-520-2600 Ext: 2517  
[ethics@carleton.ca](mailto:ethics@carleton.ca)

### CERTIFICATION OF INSTITUTIONAL ETHICS CLEARANCE

The Carleton University Research Ethics Board-A (CUREB-A) has granted ethics clearance for the research project described below and research may now proceed. CUREB-A is constituted and operates in compliance with the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (TCPS2).

Ethics Protocol Clearance ID: Project # 110549

Project Team Members: Wendy Fraser (Primary Investigator)

Prof. Janna Fox (Research Supervisor)

Project Title: Improving L2 Oral Language Skills: Evaluating the Role Of ePortfolio in Fostering Learner Autonomy

Funding Source (If applicable):

Effective: April 03, 2019 Expires: April 30, 2020.

Please ensure the study clearance number is prominently placed in all recruitment and consent materials: CUREB-A Clearance # 110549.

#### Restrictions:

This certification is subject to the following conditions:

1. Clearance is granted only for the research and purposes described in the application.
2. Any modification to the approved research must be submitted to CUREB-A via a Change to Protocol Form. All changes must be cleared prior to the continuance of the research.
3. An Annual Status Report for the renewal of ethics clearance must be submitted and cleared by the renewal date listed above. Failure to submit the Annual Status Report will result in the closure of the file. If funding is associated, funds will be frozen.
4. A closure request must be sent to CUREB-A when the research is complete or terminated.
5. During the course of the study, if you encounter an adverse event, material incidental finding, protocol deviation or other unanticipated problem, you must complete and submit a Report of Adverse Events and Unanticipated Problems Form, found here:

<https://carleton.ca/researchethics/forms-and-templates/>

Failure to conduct the research in accordance with the principles of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans 2nd edition* and the *Carleton University Policies and Procedures for the Ethical Conduct of Research* may result in the suspension or termination of the research project.

Upon reasonable request, it is the policy of CUREB, for cleared protocols, to release the name of the PI, the title of the project, and the date of clearance and any renewal(s).

Please contact the Research Compliance Coordinators, at [ethics@carleton.ca](mailto:ethics@carleton.ca), if you have any questions.

CLEARED BY: Date: April 03, 2019

A handwritten signature in black ink, appearing to read "Bernadette Campbell". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Bernadette Campbell, PhD, Chair, CUREB-A

A handwritten signature in black ink, appearing to read "Natasha Artemeva". The signature is cursive and stylized, with a long horizontal stroke extending to the left.

Natasha Artemeva, PhD, Vice-Chair, CUREB-A

PANEL ON  
RESEARCH ETHICS

*Navigating the ethics of human research*

TCPS 2: CORE

## *Certificate of Completion*

*This document certifies that*

**Wendy Fraser**

*has completed the Tri-Council Policy Statement:  
Ethical Conduct for Research Involving Humans  
Course on Research Ethics (TCPS 2: CORE)*

Date of Issue: **13 October, 2018**

### **E Third party recruitment script**

Hi, my name is \_\_\_\_\_, and I'm a colleague of Wendy Fraser, your instructor. As you may know, she is working on her PhD and her area of study is the Oral Portfolio. She is interested in whether the Oral Portfolio helps you to improve your oral language and if it helps you to take more control in making some improvements yourself.

In order to do this, she would like your permission to examine the results of your pre and post diagnostic assessments, the written reflections you submitted as part of your Oral Portfolio, and your responses to the questionnaire. She will not be using any of your audio or video recordings in her study. She would also like permission to contact you by email to arrange for a short interview, if you agree to this.

She will not use your name in any discussion of the results of the study, either in conversation or in written documents. Your identity will not be disclosed.

Shortly I will be handing out a letter of invitation that will explain the study and ask if you are willing to participate. You can indicate your wish to participate or not on this letter.

You may agree to let Wendy examine the diagnostic assessments, the written reflections, and the responses to the questionnaire, but you may not want to be contacted for an interview. That is fine. You can just indicate that on the form.

After you have completed the form, I will collect them. I will not share this information with Wendy until all course grades have been submitted. She will not know if you have agreed to participate until she has submitted the grades for the course.

After the grades have been submitted, I will give Wendy these forms and she will examine the materials from only those people who have agreed to participate in the study.

There is no risk to you. Your identity will not be disclosed during any aspect of the study. The information gathered during the study will help to improve the use of the Oral Portfolio for future students.

You are under no pressure to participate in the study. As I mentioned, Wendy will not know who has agreed to participate until all course grades have been submitted.

I will now hand out the letter of invitation to participate in the research and we will go over it.

## F Letter of invitation and consent forms

### Name and Contact Information of Researchers

#### Researcher:

Wendy Fraser, ESLA Instructor, School of Linguistics and Language Studies (SLaLS),  
212 Paterson Hall; Carleton University; 1125 Colonel By Drive; Ottawa, ON K1S 5B6

Wendy.Fraser@carleton.ca, telephone, 613-265-9246

#### Project Title

Improving L2 Oral Language Skills: Evaluating the Role Of ePortfolio in Fostering Learner  
Autonomy.

#### Project Sponsor and Funder (if any)

This project is not funded.

#### Carleton University Project Clearance

Clearance #: CUREB-A Clearance # 110549. Date of Clearance: April 03, 2019

### Invitation

#### Dear Students:

My name is Wendy Fraser, and I am a graduate student at Carleton University undertaking research for a PhD dissertation in Linguistics and Applied Language studies. This research is supervised by Professor Janna Fox, an Associate Professor in the School of Linguistics and Language Studies, Carleton University.

#### What is the purpose of the study?

This study is investigating the relationship between ePortfolio, autonomy, and the improvement of L2 learners' pronunciation and fluency. There is a lack of focus on oral communication in tertiary level language classrooms (Wood, 2010). This, in turn, means that the L2 learners may not develop the whole range of academic skills necessary for success at university level programs.

#### What will I be asked to do?

Upon receiving your consent form from the third party, I will collect your: (a) pre- and post-tests; (b) questionnaire responses; and (c) written reflections. I will not be using your audio, or video files.

You can also volunteer to participate in an interview of approximately 40 minutes in a quiet and private location at Carleton University.

Once you have agreed to participate in the interview, I will email you the questions for the interview and arrange to meet with you at your convenience.

During the interview, you will be asked questions about your experience using ePortfolio for enhancing your L2 oral skills; challenges you may have experienced while adapting to ePortfolio technology; and out-of-class English language oral practices that you may have undertaken.

You will not be asked to volunteer sensitive personal information about your profession, and you will not be exposed to unpleasant or contentious questions.

If you feel uncomfortable about answering any of the questions, you have the right not to answer. It is important to note that the interview will be audio-recorded and transcribed for analysis. However, all identifiable personal information will be removed prior to analysis, and once transcriptions are ready, the original audio-tapes will be destroyed to protect confidentiality.

#### Possible Study Benefits

Although you may not receive any direct benefits from your participation in the study, there may be some indirect benefits. Reflection on and accounts of how the ePortfolio is operating at the classroom level may support more effective teaching (Woods, 1996; Fox, 2009).

#### No waiver of your rights

By signing this form, you are not waiving any rights or releasing the researchers from any liability.

#### Withdrawing from the study

If you wish to withdraw from the study, you will have to send the researcher an e-mail indicating your wish to withdraw, however, all related information up until the time of withdrawal will be retained for analysis.

#### Confidentiality

Your participation in the study is confidential. Only the researcher and the supervisor will have access to the interview data and reflections during the process of the research. All the data will be saved in a password protected and encrypted USB key, which will be stored in a locked cabinet in the researcher's office at Carleton University. Each participant will be given a code name. Transcripts, questionnaire responses, and reflections will be labelled with this code name. All data will be altered to remove all information that might lead to your identification. Your identity will not be revealed in any reports, papers, research articles, presentations or dissertations. However, your identity will be known to the researchers during data gathering. All documents will be shredded, and once interview data are analysed the audio data will be destroyed upon the completion of my research. The estimated date of completion is August 30th, 2023.

#### Potential Risks

No risk greater than what one would expect in the course of daily life or a professional encounter with an instructor is anticipated. However, email is not a secure means of transmitting data. Should your e-mail be intercepted, your identity as a participant in this study may be known.

#### Data Retention

After the study is completed, your de-identified data will be retained for future research use. Upon completion, all remaining audio data will be deleted in the drive and only anonymized

research data will be kept by the researcher and potentially used for other research projects, including possible publications and presentations on this topic. I will be more than happy to provide you with the results and findings of this study once it is completed, if you are interested.  
New information during the study

In the event that any changes could affect your decision to continue participating in this study, you will be promptly informed.

#### Ethics review

For your security this research was reviewed and received ethics clearance by the Carleton University Research Ethics Board (REB). If you have any ethical concerns with the study, please contact Dr. Bernadette Campbell, Chair, Carleton University Research Ethics Board-A (by phone at 613-520-2600 ext. 2517 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

Yours Sincerely

Wendy Fraser

ESLA Instructor, School of Linguistics and Language Studies.

#### Statement of Consent

Please sign consent form and to third party. When returned, I will sign my portion and return it to you as a PDF.

I voluntarily agree for you to examine my (a) pre and post tests; (b) questionnaire responses; and (c) written reflections.       No       Yes

I agree to participate in a focus group interview       No       Yes

I agree to be audio-recorded during the interviews       No       Yes

\_\_\_\_\_  
Signature of participants

\_\_\_\_\_  
Date

Research team member who interacted with the subject

I have explained the study to the participant and answered all of their questions. The participants appeared to understand and agree. I provide a copy of the consent form to the participant for their reference.

\_\_\_\_\_  
Signature of researcher

\_\_\_\_\_  
Date

## G ePortfolio assignments, evaluation rubric, and examples of reflections

### ePortfolio Assignments

#### Assignment 1

**Sample 1: Focus on clarity of speech and sound level. Try to speak as clearly as you can and keep your voice at mid volume so it is easily heard.**

In this reflection (approximately 3-4 minutes), think about the following questions.

- When are you most comfortable speaking English?
- Do you think speaking in English is an important skill at university? Why or why not?
- What are your main difficulties when you're speaking English? For example, does your listener have trouble understanding you? Do you have difficulty finding the right words? Is your speech fluent or full of hesitation? Are you happy with your pronunciation? Can people understand you? do they ask you to repeat often?
- How do you think keeping a speech portfolio might help you?
- Imagine yourself in four years. You will have a second identity: you will be your English Speaking Self. Describe yourself as an English speaker. What will you be able to do? What will you still have problems with?

Be sure to run the Dictation or Speech-to-Text software as you make your video so you have a transcription of what you said. Underline areas in the text that do not match what you thought you said and think about why you are having trouble saying those words clearly. Talk about this in your reflection. Be sure to post the transcript after you have underlined the problematic areas. You can put commas and periods into the transcript, but don't correct it in any other way.

After you have posted your video, listen to it one more time. Then write a critique of your speech, explaining what you see as the strengths and the weaknesses, considering such factors as pronunciation, vocabulary, fluency (hesitation, long pauses, stumbles), and state what you would like to improve in the next entry. Refer to the dictation transcript in your reflection, explaining exactly what you will do to improve those areas. You can type this reflection directly into a text box.

## Assignment 2

### Sample 2: **Focus on**

- **speaking slowly, at a good volume and clearly**
- **moving your mouth and your lips to form the English sounds as clearly as you can**
- **Listen to the video *Improving Your Pronunciation* and try some of her suggestions. There are other related videos that you might try.**

In this assignment (approximately 3-4 minutes), imagine that you making a video and webpage to convince other students to come to study here at Carleton in your program. Explain a little about your major and why you find it interesting. (If you don't like your major, talk about the program you would like to take, or hope to switch into.

You might include, for example:

- The name of the faculty that administers your major?
- Give a little information about the faculty's history, for example when was it established at Carleton. (You can usually find some information of the faculty's webpage)
- How many different programs are in the faculty?
- Is there an opportunity for cooperative work placements? How does that work?

But mostly talk about how you feel about the program and why you like studying at Carleton

You could talk about the following, but you don't have to:

- What interests you about the program
- What courses have you taken and what did you like about them
- Were there any professors you liked and why
- What courses are you excited about taking this term or in the future
- What do you like specifically about Carleton? Living in residence? Ottawa?

Also you could add a bit of interest to this page by posting a picture of a text book, an example of a course outline and/or an assignment, an assignment or lab report you are proud of, or a picture of the library or the cafeteria or anything you can think of that will people want to come and study here.

Be sure to run the Dictation or Speech-to-Text software as you make your video so you have a transcription of what you said. Underline areas in the text that do not match what you thought you said and think about why you are having trouble saying those words clearly. Talk about this in your reflection. Be sure to post the transcript after you have underlined the problematic areas. You can put commas and periods into the transcript, but don't correct it in any other way. After you have posted your video, listen to it one more time. Then write a critique of your speech, explaining what you see as the strengths and the weaknesses, considering such factors as

pronunciation, vocabulary, fluency (hesitation, long pauses, stumbles), and state what you would like to improve in the next entry. You can type this directly into a text box.

### Assignment 3

#### Sample 3: **Focus on**

- **speaking slowly and pausing between thought groups**
- **moving your mouth and your lips to form the English sounds as clearly as you can**
- consider the voiced and voiceless "th"; R; L. **Check out information about these sounds at the websites listed**

In this assignment (approximately 3-4 minutes), you will give a short presentation to your group explaining as much as you can about your research topic. Be sure to include a discussion of what you have learned so far by engaging in the research process and about yourself as a student.

You can post in the section of your cuPortfolio entitled *Exploring Your Topic*

Be sure to run the Dictation or Speech-to-Text software as you make your video so you have a transcription of what you said. Underline areas in the text that do not match what you thought you said and think about why you are having trouble saying those words clearly. Talk about this in your reflection. Be sure to post the transcript after you have underlined the problematic areas. You can put commas and periods into the transcript, but don't correct it in any other way.

After you have posted your video, listen to it one more time. Think about the goals you formulated after assignment 2. Have you accomplished those goals? Write a critique of your speech, explaining what you see as the strengths and the weaknesses, considering such factors as pronunciation, vocabulary, fluency (hesitation, long pauses, stumbles), and state what you would like to improve in the next entry and how you will try to improve it. You can type this directly into a text box.

### Assignment 4

#### Sample 4: **Focus on**

- speaking as clearly as you can and keep your voice at mid volume so it is easily heard.**
- speaking slowly, at a good volume and clearly**
- moving your mouth and your lips to form the English sounds as clearly as you can**
- speaking slowly and pausing between thought groups**

**Be sure to enunciate the voiced and voiceless "th"; R; L. (check out the videos on the website to remind yourself)**

The list above contains all the aspects you were to work on over the term.

In this last reflection (approximately 3-4 minutes), Look back over your 3 entries and evaluate your progress. The main goal of the oral portfolio was to make you aware of yourself as a speaker of English and to give you a few suggestions as to how you can improve the clarity of

your speech. Look at your first submission and compare it to your last and then think about the following questions.

- Were you surprised at how you sound when you speak English?
- Did you find it helpful to see and listen to yourself speaking English?
- Do you feel more comfortable now recording yourself and watching yourself?
- Look at the things you were to focus on in each of the speech samples. They are listed above. Explain the improvements in your speech and delivery that you hear and see from the first submission to the third?
- Look carefully at the transcript of the fourth video as you listen to yourself speaking. Is the transcript more accurate. If yes then the clarity of your speech has improved. If no, then you have not improved.
- In what specific ways will you continue to improve your spoken academic English? Be specific! Think of spoken activities that will improve your academic speech.
- How can you use the dictation software in the future to improve your presentations and communication in your courses.
- Do you feel better able to improve the clarity of your speech on your own, after the course has finished?

Be sure to run the Dictation or Speech-to-Text software as you make your video so you have a transcription of what you said. Underline areas in the text that do not match what you thought you said and think about why you are having trouble saying those words clearly. Talk about this in your reflection. Be sure to post the transcript after you have underlined the problematic areas. You can put commas and periods into the transcript, but don't correct it in any other way.

After you have posted your video, listen to it one more time. Think about the goals you formulated in the previous assignments. Have you accomplished those goals? Write a reflection about your improvement over the three videos. You can type this directly into a textbox.

## ORAL PORTFOLIO: EVALUATION

| Practice Activity               |   |   |       |
|---------------------------------|---|---|-------|
| Assignment Completed<br><br>/10 | Reflection identifies<br>1. specific errors in pronunciation and word choice;<br>2. relates to specific errors in transcript;<br>3. suggests specific ways to improve.<br><br>/10 | Performance shows focus on problems noted in previous sample (N/A)<br><br>/10   | /30   |
| Assignment 1                    |   |   | Total |
| Assignment Completed<br><br>/10 | Reflection identifies<br>1. specific errors in pronunciation and word choice;<br>2. relates to specific errors in transcript;<br>3. suggests specific ways to improve<br><br>/10  | Performance shows focus on problems noted in previous sample (practice activity).<br><br>/10                                      | /30   |
| Assignment 2                    |   |   |       |
| Assignment Completed<br><br>/10 | Reflection identifies<br>1. specific errors in pronunciation and word choice;<br>2. relates to specific errors in transcript;<br>3. suggests specific ways to improve<br><br>/10  | Performance shows focus on problems noted in previous sample. Discusses which videos were watched and how they helped.<br><br>/10 | /30   |
| Assignment 3                    |   |   |       |
| Assignment Completed<br><br>/10 | Reflection identifies<br>1. specific errors in pronunciation and word choice;<br>2. relates to specific errors in transcript;<br>3. suggests specific ways to improve<br><br>/10  | Performance shows focus on problems noted in previous sample. Discusses which videos were watched and how they helped.<br><br>/10 | /30   |
| Assignment 4                    |   |   |       |
| Assignment Completed<br><br>/10 | Reflection identifies<br>1. specific errors in pronunciation word choice;<br>2. relates to specific errors in transcript;<br>3. suggests specific ways to improve<br><br>/10      | Performance shows focus on problems noted in previous sample. Discusses which videos were watched and how they helped.<br><br>/10 | /30   |

## Evaluation of Oral Portfolio: Evidence of Learning: Overall Improvement

\_\_\_/80

|                                      |   |   |   |   |   |   |   |   |   |    |
|--------------------------------------|---|---|---|---|---|---|---|---|---|----|
| Volume control                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Use of lips and mouth to make sounds | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Stress and intonation                | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Speed: pausing between thoughts      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Pronunciation of consonants & vowels | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Use of Academic Vocabulary           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Intelligibility                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Useful reflection on own ability     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

### Examples of reflections

#### Case 1

1

#### Why do you think the dictation software did not record what you thought you were saying?

The reason why the dictation software did not record some of the words I said is that of my improper pronunciation. As I moved along with my answers, I was unable to find the proper words to deliver my idea which caused my confusion, hence my misspellings in some sentences.

#### What do you see as some of the most obvious problems?

Pronunciation, volubility, and fluency

#### What you will do to improve your speech for the next video?

I will adjust my answers by focusing on using proper words in delivering my ideas, and I will do my best to deliver more clear answers without showing any hesitation or confusion.

2

#### Reflection, Critique, and Ideas for Improvements

- **What did I improve in this video?**

Ultimately, I had to improve everything in this video from the last one (assignment #1). But I have been working hard to improve my pronunciation to get a dictation with no grammar or vocabulary mistakes. I tried to improve my pronunciation by practising my sentences a few minutes before recording my video. I also watched a video called *Improving your Pronunciation* to help me figure out different techniques I can follow to become more fluent in English. The first thing I learned is that a correct pronunciation requires control over not only the tongue, but also the mouth, throat, and even the lungs. All that simply requires daily exercising. On the other hand, I visited a website called *Rachel's English* for more pieces of advice on how to improve my English speaking skills. The first video I have watched is called *The I'M GONNA Reduction*, and the reason I chose this video is that I am trying to reduce my using of "slang" words, especially "I'm gonna". When I first came to Canada I faced some struggles understanding and

pronouncing such reductions, but when I learned how to say them, I could not stop. I figured learning more about these reductions would help me understand how to pronounce them correctly, how to avoid them, and how to use them properly.

### CRITIQUE

From reviewing and rewatching my video I have noticed a few strengths and weaknesses different from the last one. For example, I have started to take my time when speaking my ideas while giving less hesitation during my speech. I also had fewer mistakes in my speech dictation which reflects some improvement in pronunciation and clearness of speech. Also, I used a more broad vocabulary than I did the last time, and all this improvement happened mainly because I practised what I was about to say before start recording the video. On the other hand, I am still facing multiple weaknesses in my speech, unfortunately. Some of these weaknesses are the many pauses I took when speaking, followed by a lot of "umms". Hopefully, for the next video I will do my best to avoid all these struggles by being more prepared and by following the instructions from each video I have seen.

3

Reflection

**How did I improve my speaking?**

I raised my voice volume and fixed my tune (tried to make it more clear). I also tried to clearly pronounce all the letters in every word

**What videos did you watch?**

The video I watched was *R*. I watched this video because I find that words containing many Rs are not easy for me to pronounce perfectly. The video was very helpful, it gave me many techniques on how to use my tongue and mouth when pronouncing words such as "world, park, problems, etc."

Critique

**CRITIQUE**

From reviewing and rewatching my video I have noticed a few strengths and weaknesses different from the last one. For example, I have started to take my time when speaking my ideas while giving less hesitation during my speech. I also had fewer mistakes in my speech dictation which reflects some improvement in pronunciation and clearness of speech. Also, I used a more broad vocabulary than I did the last time, and all this improvement happened mainly because I practised what I was about to say before start recording the video. On the other hand, I am still facing multiple weaknesses in my speech, unfortunately. Some of these weaknesses are the many pauses I took when speaking, followed by a lot of "umms". Hopefully, for the next video, I will do my best to avoid all these struggles by being more prepared and by following the instructions from each video I have seen.

4

## Reflection

### **Were you surprised at how you sound when you speak English?**

- Yes, I was/still very surprised at the way I pronounced some of the letters and words, which I did not realize until I rewatched the videos or listened to myself speaking.

### **Did you find it helpful to see and listen to yourself speaking English?**

- Yes, it was very helpful. It was also a bit challenging since I had to make major changes to the way I speak which is for the better, but for an ESL student, it is like learning the phrases and words all over again.

### **Do you feel more comfortable now recording yourself and watching yourself?**

- Yes, I am more comfortable watching and recording myself since I am curious now to see how my speaking skill will develop in the future from what it is now.

### **Explain improvements in your speech and delivery that you hear and see from the first submission to the third?**

- Looking back at the first video, I did not take my time processing what I am about to say. For this reason, I was not clear enough when I speak. Now I make sure I take my time between every thought while keeping a clear voice.

### **Look carefully at the transcript of the fourth video as you listen to yourself speaking. Is the transcript more accurate? If yes then the clarity of your speech has improved. If no, then you have not improved.**

- Fortunately, the transcript I uploaded for my fourth video has almost no major errors. I can tell for myself that the clarity of my speech has improved and became much better than it was in the first video.

### **In what specific ways will you continue to improve your spoken academic English?**

- I feel like reading out loud would help me listen to my speech when reading, so that is one approach. I will also try to recording speech when practicing for presentations or seminars, this way I will be able to give a better presentation and highlight major issues I have when speaking.

### **How can you use the dictation software in the future to improve your presentations and communication in your courses?**

- In my program, I have to learn new terms every week, so when giving a presentation that requires me to mention these new terms I will use the dictation software to make sure I am pronouncing these new terms and new words correctly.

### **Do you feel better being able to improve the clarity of your speech on your own, after the course has finished?**

- Yes, because I believe that I should/can improve every day from now until I graduate, so I do not expect to have help every time I have a presentation or an assignment, so I make sure I push myself to get better on my own.

## Case 2

1

Recording ourselves is a great idea to catch any mistakes we might say while we talk. However, the dictation software did not record every single word I have said in the video. I think it is because the mispronounced words. I do not think the dictation software has any issues because most of my speech was recorded correctly. Enhancing my pronunciation needs a little bit practice. I think I might need to improve my listening because whatever I speak from my mouth comes from whatever I listen from my ears. Here are some solutions to improve my speaking and my listening skills. Watching the TV and listening to the radio might assist me to hear the correct pronunciation of words and then practice them while I speak. Also, being with native speakers is a good idea as well because they would not have any issues with their pronunciation.

2

Even though I tried to enhance myself and speak slower than the previous video, I still have some pronunciation issues. Based on the transcript, some words were not transcript as I spell them. I think it is because I do say the word fast and ,also, that makes me say only half of the word or a different word. However, speaking slowly is my goal because the slower I speak, the less mistakes I do when I speak. I am trying my best to aim this goal because once I start recording myself I get nervous and start throwing the words randomly. Thus, I need to get used to record myself and speak slowly as well.

### critique of my speech

After watching my video and reading my transcript, I did find some strength and weaknesses. An important strength is the realization of my speech and the knowledge of what I was saying. This means, I am aware of my topic and what it is about. However, weaknesses are very obvious such as hesitation and long pauses. Again, I am not surprised because I get nervous when I record myself so I start to hesitate when I speak. In addition to that, finding the exalt vocabulary is difficult as, again, I get nervous when I speak. It might needs a little time until I break the ice and get used to.

3

### critique of my speech

The weakness and strength in this video is similar to the previous video. However, watching one of the videos on culearn tough me the idea of moving my mouth and my lips when I pronounce English words. Thus, in this video, I was trying to follow the advice from the video but still the factor of being nerves is affecting my speech negatively. On the other hand, having enough information to present it in the video is a strength ans a positive thing because it is very important to show the audience the main ideas and concepts about the topic. In addition to that, I have tried to not to write any notes to read from them while speaking as I am thinking if I was asked about this topic in the street. Thus, I would be ready to respond without any notes. For the next video, I hope I could enhance those weaknesses to strength and apply them in all my videos or presentations.

### Reflection of my video

comparing to the previous video, I have tried to speak slower and move my lips to pronounce the words correctly. But, the nervousness is still a little bit high and lower than the previous time in the same time. What encourage me this time a little bit is watching the video on culearn that talks about the pronunciation as a physical act. basically it is the movement of the mouth and the lips together in order to say the word properly. However, I feel more comfortable talking in this video because I am aware of the topic and I have a lot of background information about it as well as it is the research topic for this course. Again, I am trying to overcome my nervousness to produce a perfect video with a full topic description. finally, in the video transcript there are few words or sentences that did not transcript the same as I did not pronounce it correctly or because of the movement of my lips and mouth. I am hoping for the next video to at least kill my nervousness and get used to record myself.

4

The recording method in improving my speaking has helped me in many aspects. First, it gives me a huge confidence and break the ice from my legs as I had this issue for a while, especially when I give a presentation. However, the essential goals were to assist my speaking and catch the mistakes that I am making and correct myself as well. self-learning is a new strategy that is being introduced to ESLA students. based on my experience, I have find where are my weaknesses and strengths. I have used some YouTube videos that helped me in pronounce the word correctly. Also, I used an electronic dictionary to listen to some words. Finally. having all the confidence I believe that recording myself will be my first method to prepare any future presentations as using the software has helped me catching the mistakes

### Case 3

1

when I started recording the dictation the cite didn't catch some of the words that I said or heard some of my spelling of the words in a different way because I'm not fluent and I am trying to use the English language as much as I can so I can see an improvement in the way of communicating with people. I feel myself really embarrassed when I begin conversing with people that I don't know aside from my sibling and his companion. I appreciate talking in English yet I have a great deal of mix-ups in my pronunciation since I get apprehensive before individuals and that makes my English not excessively familiar to, so for me I trust I can enhance my slip-ups by conversing with new individuals without being terrified or anxious and I would rehearse my intonation and my articulations of the words through me rehearsing and accomplishing more recordings that would enhance my abilities, so whenever I start a conversation with anyone that I don't I can talk immediately without being nervous because of the problems that I have so I need to train myself as much as I can so I can improve.

2

reviewing over the video, i noticed that i had some trouble with connecting my sentences together; however, overall i think i have gave enough information for what was required by me, as i have answered all questions clearly. Even though i could not get my program publishing year, i have tried enough and i gave the universities publication date instead. As I watched my first video I noticed that I have improved myself in pronouncing some of the words, which I had problems with and as long as i continue training myself I hope I will be training myself in my letters that I have problems with.

3

In my transcription I have noticed that I have many pronunciation problems in my speaking, therefore, It effected what was written in the transcript. I am using slang words in my speaking, which effected my grammar, but if I stop using the slang words when speaking I think it will improve my writing. As I am getting used to saying contraction words I am saying words like "can't, won't, and wouldn't" for example. However, I am slowly learning and realizing how I am supposed to speak and

write when it comes to the English language, due to the practise I am getting from reading books and talking to different local people with fluent English.

4

In my video I have seen that I have numerous grammatical issues in my talking, in this way, It affected what was written in the dictation transcription while the app was running. In my video I used some words that was supposed to be pronounced in a different way, which affected my syntax, yet in the video that I quit utilizing, when expressing the words, I figured that I need to improve the pronunciation of the words and to spell it right. As I am becoming more understandable to stating constriction words I am stating words like "can't, my, and wouldn't" for instance. In any case, I am gradually learning and acknowledging how I should talk and compose with regards to the English language, because of the training I am getting from doing more videos and conversing with various nearby individuals with familiar English, and communications to others

Case 4

1

While reviewing my video and the transcript, I noticed different problems and challenges that I faced completing this oral portfolio. I observed that with certain words, the dictation software did not dictate exactly what I said. I think this happened because of my mispronunciation or because I talked too fast that the dictation software could not catch what I am saying. I have realized under stressful situations, I tend to talk faster which could have been a factor resulting in the wrong words cited in the diction. I think the main problem I have is not being comfortable talking in front of a camera, therefore, I do not look comfortable talking because of this new feature I am not used to and hence, I do not talk the same way I do when I talk to other people in real life. I also think that that most of my daily oral communication is not on an academic level. When I talk, I tend to repeat the same words over even though I know the vocabulary that I want to use. In order to improve for the next video, I am planning to talk more in front of a camera. I will accomplish this by recording myself again and reviewing it on my own time. This will result in the improvement of my ability to communicate with others. By recording myself, I will also be able to hear myself talking so I can then reflect more upon my oral skills to change my mistakes for future assignments, as well as for overall improvements for real life conversations. As mentioned, by doing this will also help me in learning how to speak slower and articulate for people to clearly understand everything I am saying. This will also help me to calm my nerves and make me more comfortable with recording myself in front of a camera so next time I will look less awkward and know what I am doing. I believe doing these tasks will help improve my oral skills for the next assignment as well for my everyday life communication.

2

While reviewing my video, I observed different problems and difficulties that I faced completing the portfolio. I noticed that there were few words the dictation software did not catch what I was saying. It is probably because of the tone of my voice or my pronunciation. I think I had some trouble thinking of what I have to say which make it more challenging to say the right words at the right time. In the last reflation for the last portfolio, my main problem was that I was not comfortable talking in front of the camera. I found that in this portfolio, I achieved my goal and I was more relaxed in front of the camera. I worked on improving this by practicing talking in front of the camera. This improvement probably going to show my oral skills because the way I talked in front of the camera this time is pretty close to how I talk to other people.

3

While reviewing all the reflections that I have written, I noticed that in the first reflection my problem was not being comfortable in front of the camera. My Main Problem was that under stressful situation I tend o talk faster which made the dictation software not catch exactly what I am saying. I solved this problem by getting used to talking in front of the camera. I improved the speed of my speaking in front of the camera. The videos I watched were to improve my English speaking is

Racheal's English, improving your pronunciation. These videos helped to notice that watching videos I record is important in order to improve. It also helped me to learn the proper way to move my mouth while talking in order for the dictation software to catch the words I am saying and dictate it. My goals for the last reflects were to practice talking in front of the camera more and to say the right words at the right time. I think that my speaking in front of the camera is still not the way I speak to other people, but it defiantly got improved from the first time. I tried to say the right words at the right time, but it was as successful as I thought it would be.

On the other hand, while recording this video I absorbed the different type of problem which was the time. I did not pay attention to dividing the ideas that I wanted to talk about on the time I had. I have done a lot of research on my topic that made me want to say all I know but at the same time, I couldn't explain all the ideas properly which did not show my real oral skills.

4

While reviewing all the reflections that I have written, I noticed that in the first reflection my main issue was not being comfortable in front of the camera. My problem was that under stressful situation I tend to talk faster which made the dictation software not catch exactly what I am saying. The problem was accomplished by getting used to talking in front of the camera. I noticed in this video that the dictation software dictated exactly what I said. That is why I did not have any mistakes in my transcript. My goal was accomplished because I got used to talking in front of the camera as well as talking with a speed that helps the dictation software dictate everything I say.

I improved the speed of my speaking in front of the camera. The videos I watched were to improve my English speaking is Racheal's English, improving your pronunciation. These videos helped to notice that watching videos I record is important in order to improve. It also helped me to learn the proper way to move my mouth while talking in order for the dictation software to catch the words I am saying and dictate it.

## Case 5

1

In the process of recording my video using dictation software, I found a lot problems, the dictation software did not record my voice as expected, that means my pronunciation was not clear, and also, I noticed that this software will also record the wrong sentence because of your grammar problems. So my main problem is pronunciation and grammar. I decided to do some grammar questions in the future and improve my pronunciation problems.

2

on the invention a joins--->and eventually joined

filled--->field

the sample of power list cans spirit--->the society. For example, terrorists can spread their hate

our ways--->terrorists

thin sliced--->depressed

and media don't quite a Republic Waste quality media Subways--->media worker and then provide the public with quality media services

peak --->big

feel to the--->build their

Lumi--->learning

In this oral practice, I can feel that I still have a lot of problems with my spoken language. Firstly, Dictation Software cannot distinguish many of my pronunciation, it is due to my accent, I have to acknowledge that I am not good at the pronunciation of some letters, such as "l" and "e" and I am not good at reading long words. secondly, I have trouble with how to arrange my sentence, I need to know where I need to break. Finally, I hope that in the future I can adjust my facial expressions and use more gesture.

3

Cooperation-->Cooperative

cassius-->Cautious

motivational -->multinational

coming nights-->teminate

call Samos-->consumers

label--> labor

In this oral practice, I think I have the following questions:

1. I think my voice is still not clear enough. There are a few long words that sound inaccurate.
2. I don't have a lot of facial expressions, which makes my speech look very inactive.
3. I can't be very fluent in telling my theme. I made some notes. I need to keep looking at it during the speech to remember what I want to say.

Compared with the previous two speeches, I also have some advances. I feel that through this practice, my spoken language has great improve.

4

uto pro folio-->oral portfolio

stretch-->strange

except-->in fact

swimming-->three

grandma -->grammar

normal us-->nervousness

properties -->practices

After this oral practice, I can obviously feel my change. First of all, I am more confident. I have not adapted to this mode before, but when I am used to it, I think this is a very interesting thing. Secondly, I think my pronunciation is more accurate. I tried to practice the pronunciation of some words before I started the presentation. When I used the dictation software, most of them were recorded correctly. Finally, I think this project is useful, I hope to continue using this method in the future to help me practice speaking, Speaking is one of the necessary foundations for studying in Canada. I should do more exercises to gain more advantages in future studies.

## Case 6

### R1

When I look at the video, I found out that when I speak English. The longer I speak, the lower the voice it gets. And I would speak faster and faster than I assumed everyone can understand what I am saying. This was what my teacher trying to fix me long time ago. I will try to speak at the same voice level and pace to fix that. And my pronunciation is kind of unclear on words with "th" in them. I still haven't formed the habit of pronouncing it, I just mixed it up with "s" a lot. I still talk with sort Chinese accent. I will practice reading words with "th" in them to practice until I get used to the "th" pronunciation. And there is a lot of hesitation during the speech. It's mainly because that I have to translate the thing I think into English word by word and then construct it. Besides, I learn English by watching American soap opera, so sometimes I tend to say "gonna" instead of "going to". I will try to avoid using slang during academic speech.

### R2

I think my speech becomes better, from fluency to pronunciation. The dictation software recognizes most of my speech now. I barely hesitate during the speech. I don't talk as quick as I used to before and I mumbled less. I just tried to talk in the normal pace and have a clear mind of what I am going to talk about. My "e", "ey" and "ay" pronunciation isn't that good. I watched the "**Pronunciation is a physical act**" video. It really helped me about being confident. I wasn't confident enough, but now I feel more comfortable talking in the public. Next time, I would like to learn more ways of expressing things. And learn more vocabulary.

### R3

I accomplished the goals from last video. I did slower my pace of speaking English, and it did become more clear, though the mumble still happens sometime. And my vocabulary did increase because of the articles I read. My strengths are confident, correct hesitation and no long pauses or stumbles during speech. Yet, I still have problems on pronunciation and grammar. When I speak, I tend to be careless about them. I would like to improve my pronunciation by looking at more videos and learn how to make vowel sound better. As for the grammar part, I will use more complex sentences to replace simple sentences. And concentrate more during speech.

R4

Missing

R5

After reading the transcript, I find out that I make less and less mistakes. When I underline the mistakes I made, I find that the mistakes have no connections to the word I was pronouncing. It is maybe because that I was mumbling again, or I was too far from the laptop's microphone. And I find out a new problem: pronouncing words have repeat characters ex.: start, died. It can mainly be problems with my tongue. I will try to fix that. After all, my oral skills have become better than before. I watched the th and the v&w video. It really helped me a lot. And I write a lot of words I have trouble reading down, so that I can read them repeatedly until I get them all correct. I have achieved most of my goals. I mumble less, speak in a normal pace and my voice is clear now; and most of the native speakers do not have any trouble understanding me. Thanks this ESL course and Mrs. Wendy for helping me with my oral skills. It helps me a lot in both my daily and academic life.

## Case 7

1

After looking at the transcript of my youtube video, I notice that the dictation software can't record the words when you are speaking very fast. The dictation software connects all the sentences together, thus the speech looks like it doesn't make sense. So for the next video, I'll try to speak slowly with a clear pronunciation for the words. Additionally, after looking at my video, I find some grammatical mistakes and many repetitive words that I should start working on them.

2

From rewatching and reviewing my video, I've watched many strength and weakness that differs from the first video. In the previous Oral Portfolio, the transcript was not able to cover all of my words because I was speaking very fast in the video. However, in the transcript of the second video, I tend to speak slowly in order to show the word it's exact pronunciation. This helps me so much when I reviewed my new transcript, where there are many words that make sense and sentences that can be understood. Moreover, in Oral Portfolio 2, I find some improvements in my grammar and new vocabulary words that are beneficial and related to my field. Additionally, I watch 'Th in Academic English' video on Rachel's online school website, in which I've taught from that video that Th is not a stop consonant; it's a free flow of air. After watching this video, I worked on the Th consonant while recording and it works with my software dictation. Also, I watched the video "Pronunciation is a physical act" in which I learned that in order to modify my accent, I should control my lips, teeth, tongue, throat and lungs. However, I see some long pauses and stumbles in my video that I should work on. I can improve this problem by speaking with others in our social life without getting hesitate with what I am thinking to say. Also, I find that I don't stop while speaking and I don't separate the sentences. This should be worked on for the next time in order to let the speaker gets my point of view in an easy way. I can improve more by watching some videos on how we pronounce words.

3

In this video, I had improved so many things from the previous 2 assignments. Also, those assignments affect my in-class performance, in which I started talking fluently with good pronunciations for the words. In assignment #2, I watched 'Th in Academic English' video on

Rachel's online school website, in which I've taught from that video that Th is not a stop consonant; it's a free flow of air. I take advantage of this video as a template to improve my Th constant in my assignment #3. Thus, finding in my transcript clear words with a Th constant. Moreover, I had watched a video on Rachel's English website called "Pronunciation is a physical act" in which I learned that in order to modify my accent, I should control my lips, teeth, tongue, throat and lungs. In this assignment, I follow her advice and it works because I see the difference between the three transcripts. However, I've watched another video from Rachel's website to improve my assignment #3 called "How to Pronounce the -ed verb endings". In this video, I learned the three ways of how -ed verb endings and the rules of pronouncing them. My goal in this assignment was to cover what was my research question about, explaining it in an easy way, and try to improve my speaking. In this assignment, I discuss how do cultural interactions affect international students. I had accomplished those goals in which I explain my point of view of what my research would look alike. In this assignment, I see many strengths including grammar, vocabulary, and fluency that I didn't see them in the first two assignments. I started to talk at a constant speed in which my new transcript had covered every word I was trying to say. When I reviewed my transcript there were few mistakes compared to the previous two transcripts. Also, I tried to decrease the long pauses that were a weakness in the previous videos but still I need to work on them more especially for the pauses and stumbles. Also, I was improving to separate sentences while talking, but I find that I don't achieve this skill in a perfect way. This thing should be worked on better for the next video.

4

#### **Were you surprised at how you sound when you speak English?**

After watching my videos, I am still surprised about some word pronunciations especially for the non-familiar words that we don't use them in our daily life.

#### **Did you find it helpful to see and listen to yourself speaking English?**

Yes, I find it helpful to watch my videos again because I start realizing that I have some problems that I need to work on and try to improve it.

#### **Do you feel more comfortable now recording yourself and watching yourself?**

I feel more comfortable now in recording myself especially after learning some strategies about letters' pronunciations assigned through some videos.

#### **Look at the things you were to focus on in each of the speech samples. They are listed above. Explain the improvements in your speech and delivery that you hear and see from the first submission to the third?**

In the first video that was submitted on cu-portfolio, I tend to speak fluently while recording but this creates many issues in dictation software. However, I started solving this problem until I find a huge difference in the third transcript. Moreover, I worked on the pausing between thought groups and I find positive results. Also, watching the videos assigned on the voiceless "th" 'R' and 't' improved the way I pronounce the words with these letters.

**In what specific ways will you continue to improve your spoken academic English? Be specific! Think of spoken activities that will improve your academic speech.**

I think speaking out loud with people would be helpful in improving my spoken academic English. Engaging with people is a necessary tool to improve yourself, improve your confidence, your social life, and your way of speaking.

**Look carefully at the transcript of the fourth video as you listen to yourself speaking. Is the transcript more accurate. If yes then the clarity of your speech has improved. If no, then you have not improved.**

After running the fourth video and seeing the transcript it was better than the previous videos; it has few mistakes. I find many improvements and clarity in my speech comparing to my first experience for recording videos and running a software dictation on cu-portfolio.

**How can you use the dictation software in the future to improve your presentations and communication in your courses?**

In future and especially in my major I will be responsible for many presentations and dealing with people, so running dictation will help make sure that my pronunciation to the words especially biological words are right.

**Do you feel better able to improve the clarity of your speech on your own, after the course has finished?**

I think I am able to improve the clarity of my speech on my own because cu-portfolio had encouraged me to speak without feeling shy. Following my weakness in speaking through the three assigned portfolio give me a push to improve more of my speaking.

## Case 8

1

The main reason that diction software record the different word could be microphone problem. It may have some difficulty with the clarity of the sound which will affect the pronunciation of the words. On the other hand, the speed of my speech is another factor. The software may not able to catch my voice at that time. In this case, I will fix my problem and enunciate the word clearly for next time.

2

In this video, I was speaking a little bit fast than the first one. Comparing to the last video, the speed of my speaking is slower so it became more clear for people to listen. The fluency was better as well. The software may not follow the entire sentence so it changes the sentence with the original one. Secondly, I was a little nervous when I was recording the video. Therefore, I did not enunciate each of the syllables of the words. It makes the software skip some of the words in the transcription. Overall I think the video was not too bad for me, but it is not a satisfying work as well. For the next time, I will try to enunciate the words and make the video the same as the transcription of it as much

as possible. Also, I should learn some vocabulary from Rachel's English (2019) to avoid using the same words for too many times in the next video.

3

This time the transcription only have few mistakes. Comparing to the last time, most of the oral mistakes were fixed, such as the speed, the pronunciation, and volume of voice. Last time I watch the video *TH sound* from Rachel's English website. The video is concentrated on how to pronounce TH sound which is pretty useful because sometimes I got stuck when I say sentences which include TH sound with fast speed.

After watching this time's video, there are a few mistakes that I found out the fluency of the speech was not good because I still do long pauses during my presentation. The main problem is wordiness, I was using the word "application" for over 5 times in this video. In my opinion, I need to study for some vocabulary and phrases to make a better quality of my presentation.

4

This time the transcription also has a few mistakes. However, I feel more confident and comfortable when recording the video. I think the problem might be the speed of speaking. On the other hand, this time I also have problem with the vocabulary of the topic. I feel wordiness when I was thinking about the sentences. Last time, I check the website and watch several videos from the "Phrases" category to memorize some of the new words. However, they are not useful for doing reflectiion.

After watching this time's video, there are still a few mistakes that I found out the fluency of the speech was not good because I still do long pauses during my presentation. The main problem is wordiness, I always get stuck during the video because the topic is completely different from last time. In my opinion, I need to study for some vocabulary and phrases specifically for reflection to make a better quality of my presentation.

## Case 9

1

After using the dictation software, it discloses that two main problems of speaking separately. Moreover, speak very quickly cannot make the software understand the exact contents. As a result, there are many errors after dictation software accepts the whole contents. Furthermore, the second problem is Pronunciation is inaccurate which let the software shows the different and straight words. Therefore, it is important to improve the pronunciation in order to have the standard pronunciation. In addition, the most obvious problem is the tension and lack of English fluency. In this case, preparing the problems before starting to have a speech is very significant. As a consequence, for the next speech, I will gain the lesson of the last speech in order to improve my speaking skills. Besides, it is necessary to listen to some great speeches and learn the advantages of these speeches.

2

Compare with the last speech, I start to know the importance of speed and volume. Moreover, this speech has already improved the problems of articulation, which make the sound recorder can reductive speech as far as possible. In addition, these three different videos remind me pronunciation can be considered as physical exercises. Therefore, it is necessary to train our mouth in order to change our accent and pronunciation. Furthermore, there are four key elements to work

our daily speaking. Such as teeth, tongue, vocal cords and lung. In addition, Rachel's English shows various tips for English speaking. For example, when people speak the words that have similar pronunciation or that are confusing. Like hot and hut, which let me think of the Previous experience of learning English. Besides, this speech has good fluency and conjunction. However, it lacks a rich vocabulary and even stumbles.

3

For this new speech about my topic, there are some problems occur that not to be neglected during the process of illuminating my subject. Moreover, these mistakes bother me as far as possible. For example, the sound record cannot show the original words if I speak in a whisper. This example is very significant because this small detail discloses the importance of speak loudly. In addition, it is necessary to do more practice and preparation before doing the speech. As a result, these necessary preparations can make speech received twice the result with half the effort. Furthermore, the mouth and attitude should be in a relaxed state can solve the problem of nervous when I discuss the topic. For instance, I always worry about the sound record cannot present my initial idea of whether I have the wrong pronounce or bad sentences. However, I have spoken loudly in this speech that corrected the mistake. In conclusion, I still need to pay attention to the nervousness and preparation for the next speech.4

4

According to watch the video over and over again, and review the previous reflections, it shows my weakness of tension and lack of English fluency is raised apparently. Moreover, Rachel's English apply the various methods to help me with speaking training. For example, when people speak the words that have similar pronunciation or that are confusing. Like hot and hut. This example is very important because speaking tips can help people avoid a small problem in daily communication. In addition, previous videos illustrate the importance of the teeth, tongue, vocal cords and lung. Therefore, I start to practice relevant speaking skills and actively use mouth in order to improve myself. In addition, speaking loudly can help increase the accuracy of the transcript when I use the dictation software.

## Case 10

1

In the video, some errors on the pronunciation. Some words can not be pronounced clearly like 'f'. The hesitate will cause the wrong words. I try to speak slowly when I have the speech but with the time goes I become nervous and speak faster. I can not guarantee the speaking speed has been always slow. At the same time, the pronunciation of some words are not very well and it will cause the hesitate. Sometimes I hesitate or the repetition of words will cause the conversion error. I also try to speak with my mouth open so that I can speak more clearly and correctly. I think it is good for my speech volume. I will make my pronunciation more accurate and increase my vocabulary to try not to always use the same words.

2

In this video, I tried to speak at a slower rate than in previous video. When I say some same words, it will turn to the same wrong word. It should be that I have some pronunciation problems. I found that sometimes when I speak a whole sentence, there are some words that I will link up to make it unclear. Sometimes I will say the wrong words to express my meaning because of feel nervous and I will correct it quickly. Sometimes when I am in the middle of two sentences, I will have a longer pause and can not think faster. In aspects of volume, I think I have always done well.

3

After listening this video, the volume of speech is appropriate and my speed is not very fast. When I speak, some words I read are not very clear, pronunciation is not very full may because my mouth is not wide open and sometimes when several words are pronounced together, it's easy to be confused and difficult for others to understand. Some pronunciation is easy for me to say poorly. For example, are higher, when I keep speaking it, its pronunciation may change and I can not read it well. Then I will try to say it more slowly and open the mouth and make every word clear instead of speaking them continuous. The video of pronunciation is a physical act that helping me when I try to open my mouth wide to speak English words.

4

In the previous videos, I said that I always speak fast and the pronunciation of some words are not very well. In this video, I pay attention to it and try to improve it during the video recording. In the transcript, there are still some problems that the word of normal become 'no more'. The pronunciation of R is not clear, so it turns a word into two. The 'd' of sound is spoken light and cause it turn another word. Some of the prepositions in the sentence I said are not very clear and there are some problems. I have improve my pronunciation by watching the videos which teach how to speak clearly and how to pronounce the 'th'. These videos help me to pronounce each word more accurately. The volume of speaking has been maintained very well.

## H Coding scheme and examples of participant reflections (verbatim)

*Analysis of reflections: Categories for coding the autonomous learning context*

| Steps in Learning                    |                            | Learner Experience   | Operationalizing Experience  |
|--------------------------------------|----------------------------|--|--|
| <b>Identifying gaps</b>              |                            | L realizes that there is a difference between what s/he thinks he said and what was transcribed (gap) and prioritizes issues to be addressed | Many learners do not realize that the sounds they make in their heads are not the sounds that come out of their mouths. The AR will fill a sequence that it does not recognize with alternate words. The student must underline these discrepancies by listening to the video again and reading the transcript. An enlightening moment! Sometimes there are many such discrepancies, and the student must decide what s/he will work on for this particular session. |
| <b>Setting objectives</b>            |                            | L analyzes issues/indicates desired outcome of learning  | The AR only indicates where the words the learner said could not be recognized. The learner must analyze what problem caused the discrepancy. It could be volume; speed; use of lips, tongue, and mouth; pronunciation of particular vowels and/or consonants; a combination of issues. An identification of the issue should be followed by the desired outcome: I will speak at a regulated volume; I will speak more slowly...                                    |
| <b>Planning Learning strategies</b>  |                            | L decides how to approach reducing the gap   | L suggests specific ways to improve: I'm going to watch; try; practice; do   |
| <b>Selecting Learning resources</b>  |                            | L selects from identified resources  | L indicates which of the specific resources identified in the learning model will be used  |
| <b>Implementing plan</b>             |                            | L indicates action taken: watched; tried; practiced; did   | L confirms that the planned activities were accomplished   |
| <b>Monitoring/Assessing progress</b> |                            | L assesses outcome of activities   | L assesses the results of learning by analyzing the next video   |
| <b>Reflection on Learning</b>        | Loop 1: on the project     | L engages in global reflection on learning/pronunciation   | L limits reflection to the project; relating comments to activities related to particular submissions  |
|                                      | Loop 2: beyond the project | L engages in global reflection on learning/pronunciation   | L steps back from the present activities to reflect on performance in other areas of his/her life, past or present   |

## Examples of participant comments (verbatim)

| Categories of an autonomous learning context | Examples of Participant comments (verbatim)  |
|--|--|
| <b>Identifying gaps</b>                      | <ul style="list-style-type: none"> <li>• The reason why the dictation software did not record some of the words I said is that of my improper pronunciation.</li> <li>• Pronunciation, volubility, and fluency</li> <li>• On the other hand, I am still facing multiple weaknesses in my speech, unfortunately. Some of these weaknesses are the many pauses I took when speaking, followed by a lot of "umms".</li> <li>• I was/still very surprised at the way I pronounced some of the letters and words, which I did not realize until I rewatched the videos or listened to myself speaking.</li> <li>• According to the video I had recorded, the problems of my speaking are mainly focusing on the pronunciation, grammar mistakes, sentence structure.</li> </ul>   |
| <b>Implementing plan</b>                     | <ul style="list-style-type: none"> <li>• In order to promote the quality of my speech, I followed the decision I had made in the past. Fortunately, the attempt worked, but this method needs more attempt.</li> <li>• This time, I practice a lot of time on some long vocabulary that I need to say during speaking. To improve my pronunciation, I continued to watch speaking video to make improvement. I recently watched Rachel's English video "Top 10-Pronunciation Guide-Learn English", to learn the pronunciation of each words correct word.</li> <li>• Before recording, I have watched lots of videos from Rachael about how to speak more fluently and clearly. To use the lips and mouth would make speaking better. Moreover, to let others understand what you said is a significant thing.</li> </ul>  |
| <b>Monitoring/Assessing Progress</b>         | <ul style="list-style-type: none"> <li>• From reviewing and rewatching my video I have noticed a few strengths and weaknesses different from the last one. For example, I have started to take my time when speaking my ideas while giving less hesitation during my speech. I also had fewer mistakes in my speech dictation which reflects some improvement in pronunciation and clearness of speech. Also, I used a more broad vocabulary than I did the last time, and all this improvement happened mainly because I practised what I was about to say before start recording the video.</li> <li>• For the video I had took this time. The front part of my speech was recorded clearly, but there are several sentences were not recorded due to the internet problem, which means that my pronunciation was acceptable this time. But there are still problems on fluency and ideas of the speech. There are less gramma mistakes than last time, but repetitions of phrases appeared frequently.</li> </ul> |

|                                       |  |
|---------------------------------------|--|
|                                       | <ul style="list-style-type: none"> <li>• From my opinion, I thought the lack of ideas may cause the repetition of words.</li> <li>• Basically, based on the video, there are no clear improvement performed by my presentation. The problems were still emerged through the application of grammar and pronunciation.</li> <li>• After a long time of practicing, recording videos and doing reflections with them, my speech becomes clearer and more accurate.</li> </ul>  |
| <b>Planning Learning Strategies</b>   | <ul style="list-style-type: none"> <li>• practising my sentences a few minutes before recording my video</li> <li>• All that simply requires daily exercising.</li> <li>• Hopefully, for the next video I will do my best to avoid all these struggles by being more prepared and by following the instructions from each video I have seen.</li> <li>• reading out loud would help me listen to my speech when reading, so that is one approach. I will also try to recording speech when practicing for presentations or seminars, this way I will be able to give a better presentation and highlight major issues I have when speaking.</li> <li>• To resolve these problems, I need to speak slower louder.</li> <li>• To solve this problem, I think I need to speak slower, in order to give me more time for thinking.</li> <li>• Enhancing my pronunciation needs a little bit practice. I think I might need to improve my listening because whatever I speak from my mouth comes from whatever I listen from my ears. Here are some solutions to improve my speaking and my listening skills. Watching the TV and listening to the radio might assist me to hear the correct pronunciation of words and then practice them while I speak. Also, being with native speakers is a good idea as well because they would not have any issues with their pronunciation.</li> </ul>   |
| <b>Reflection on Learning: Loop 1</b> | <ul style="list-style-type: none"> <li>• am more comfortable watching and recording myself since I am curious now to see how my speaking skill will develop in the future from what it is now.</li> <li>• I believe that I should/can improve every day from now until I graduate, so I do not expect to have help every time I have a presentation or an assignment, so I make sure I push myself to get better on my own.</li> <li>• I guess the reason maybe is that when I pay attention on grammar, I may have less attention on my pronunciation. Thus, the speed of speaking still need to change in order to figure out a certain speed that is fit in me.</li> <li>• In order to resolve the problem of pronunciation, I had watched the videos that we were recommended, I must say that the videos we were recommend to watch does helped a lot.</li> <li>• I had learned how to relax the muscle of my mouth before a speech. It helps me to pronounce the words clearly.</li> <li>• Recording ourselves is a great idea to catch any mistakes we might say while we talk.</li> <li>• The recording method in improving my speaking has helped me in many aspects. First, it gives me a huge confidence and break the ice from my legs as I had this issue for a while, especially when I give a presentation. However, the essential goals were to assist my speaking and catch the mistakes that I am making and correct myself as well. self-learning is a new strategy that is being introduced to ESLA students. based on my</li> </ul> |

experience, I have find where are my weaknesses and strengths. I have used some YouTube videos that helped me in pronounce the word correctly. Also, I used an electronic dictionary to listen to some words. Finally. having all the confidence I believe that recording myself will be my first method to prepare any future presentations as using the software has helped me catching the mistakes.

### Reflection on Learning: Loop 2

- I believe that I should/can improve every day from now until I graduate, so I do not expect to have help every time I have a presentation or an assignment, so I make sure I push myself to get better on my own.
- Before I did this homework, I always thought my English pronunciation was standard. I think my pronunciation is very accurate if I overcome the difficulties of words and grammar. But after I saw the transcript, I found that the dictionary app recorded many words I said incorrectly. This also proves that my pronunciation is actually vague and not fluent.
- This made me realize that when dictation app sometimes still can't hear the words I said, I need to get used to speaking to others at a slower speed.
- when I started recording the dictation the cite didn't catch some of the words that I said or heard some of my spelling of the words in a different way because I'm not fluent and I am trying to use the English language as much as I can so I can see an improvement in the way of communicating with people. I feel myself really embarrassed when I begin conversing with people that I don't know aside from my sibling and his companion. I appreciate talking in English yet I have a great deal of mix-ups in my pronunciation since I get apprehensive before individuals and that makes my English not excessively familiar to, so for me I trust I can enhance my slip-ups by conversing with new individuals without being terrified or anxious and I would rehearse my intonation and my articulations of the words through me rehearsing and accomplishing more recordings that would enhance my abilities, so whenever I start a conversation with anyone that I don't I can talk immediately without being nervous because of the problems that I have so I need to train myself as much as I can so I can improve.
- I have realized under stressful situations, I tend to talk faster which could have been a factor resulting in the wrong words cited in the diction.
- I also think that that most of my daily oral communication is not on an academic level. When I talk, I tend to repeat the same words over even though I know the vocabulary that I want to use.
- I will accomplish this by recording myself again and reviewing it on my own time. This will result in the improvement of my ability to communicate with others. By recording myself, I will also be able to hear myself talking so I can then reflect more upon my oral skills to change my mistakes for future assignments, as well as for overall improvements for real life conversations. As mentioned, by doing this will also help me in learning how to speak slower and articulate for people to clearly understand everything I am saying.
- I believe doing these tasks will help improve my oral skills for the next assignment as well for my everyday life communication.

- This improvement probably going to show my oral skills because the way I talked in front of the camera this time is pretty close to how I talk to other people.
- Although there might be a bit of hesitation in my speech, there is no doubt that my speaking ability has improved over the past two months.
- This was what my teacher trying to fix me long time ago.
- It's mainly because that i have to translate the thing i think into English word by word and then construct it.
- Besides, I learn English by watching american soap opera, so sometimes I tend to say "gonna" instead of "going to". I will try to avoid using slang during academic speech.

### Selecting Learning Resources

- I visited a website called *Rachel's English* for more pieces of advice on how to improve my English speaking skills.
- watching one of the videos on culearn tough me the idea of moving my mouth and my lips when I pronounce English words. Thus, in this video, I was trying to follow the advice from the video but still the factor of being nerves is affecting my speech negatively
- What encourage me this time a little bit is watching the video on culearn that talks about the pronunciation as a physical act. basically it is the movement of the mouth and the lips together in order to say the word properly.
- I have used some YouTube videos that helped me in pronounce the word correctly. Also, I used an electronic dictionary to listen to some words
- I should watch more of the instructor's video on culearn and practice pronunciation by teaching in the video.
- Overall, I decided to improve my oral ability and pronunciation accuracy through several videos posted on culearn: [TH], [L], [R] and [V&W]. At the same time, after recording the video, listen to your pronunciation repeatedly, find out what you feel bad about, and practice more.
- Although I have watched different videos on you-tube to improve my confidence at the personal level. The video that I recently watched in this regards was how to develop self confidence in public speaking with different tips.

### Setting Objectives

- However, speaking slowly is my goal because the slower I speak, the less mistakes I do
- I am trying to overcome my nervousness to produce a perfect video with a full topic description.
- I am hoping for the next video to at least kill my nervousness and get used to record myself.
- I think if I want to avoid this situation, first I need to improve the vocabulary of my English words, which can let me use more suitable words and can avoid singularity, not to use the same word too many times in a paragraph. As a matter of fact, I am ready to improve my vocabulary.
- Secondly, I need to review my grammar so that I don't stop half of the sentence and think about whether I want to add "ed" or "ing" to the next verb. Such as sometimes I say that half of what I say and then I discovered I should use "ing" not "ed", and then I change it, which may be incomprehensible to others.  
If I could have put more pressure in between two of above incisors.
- The volume of my speaking is fine, but it should be louder next time.

- 
- I still have some pronunciations that I need to still work on. First of all, I think I need to establish a strong level of expression. Whether it is my native language or English, I need to express my views completely and clearly.

## **I The interview questions and transcript of interview**

### **Interview Questions**

1. What do you think are the benefits to the student portfolios?
2. What are the drawbacks to student portfolios?
3. Do you feel better able to help yourself improve your oral speech after using the e-Portfolio?
4. Describe your experience using the e-Portfolio.
5. Do you have any comments about using the e-Portfolio to improve your speaking?
6. Think about yourself when you first started to use the e-portfolio and now. Have you changed?

### **Transcript of Interview**

Wendy:

... so we'll start that. Okay, good. When you think about it, when you look back on the e-portfolio, what are your feelings? What do you think about what comes to mind?

Participant:

I think it was a bit of a challenge, in a good way. Like you said, it's not easy to see yourself speaking, recording ourselves in the video, only the video, and listening back to it. You can hear everything you say, and the way you say it. Let's be honest. For us, as an ESL student, when we speak English, we do not hear the accent that we speak with, the accent that we have. It's not easy to hear the mistakes we make. It's not easy to hear how we pronounce specific letters or words or sentences, so that was challenging, but it was a lot helpful because I was able to see where I had mistakes and underline it and practice how to say the same word over and over again.

Participant:

I noticed that, after that, when you go outside and talk to your friends, you start thinking twice before you say a word, a specific word or a sentence, so that was good. That was challenging because it takes a lot of practice, but it was really helpful for the dictation. It was helpful. It was really helpful. As you notice right now, I'm saying a lot of um. When you see the software writing down the words you're saying, it also helps you realize that you either take your time talking or how you think before you speak.

Participant:

How do I say this? Usually when you talk, you just ... For us, when we are talking in English, we're connecting dots in our heads with the words and how to build the sentence. The dictation shows you that pattern that's going on in your head. To me, that was a lot helpful, as well. Just looking at it and correcting ourselves, and diagnose the way we talk, and the way we speak, and the way we write and everything, that was really challenging and helpful as well.

Wendy:

It's interesting, too, because if you're going to be a lawyer, one of the things that you have to be able to do is speak clearly and speak with strength.

Participant:

Fluently, yeah, exactly.

Wendy:

Did you like using the technology? Did you find the technology challenging at all?

Participant:

I am not sure. Well, the technology, the e-portfolio was fun. It was fun to make, and it was easy to learn. It wasn't that difficult to build our own portfolio and upload our videos and expectations and everything. The dictation software, like you said, unless you say the word in the standard English, it won't record it right, or tell you exactly what you said. With that being said, it was not 100% accurate, but at the same time, it made us think twice before we say the word because we have to think about how to properly say it.

Wendy:

What about the activities that we did, you remember, the reflection part of it?

Participant:

The reflection on how we got better, right? That one?

Wendy:

Yeah.

Participant:

It was interesting as well because evaluating yourself ... I know that sometimes I can just write whatever, when it comes to reflecting, because eventually I'm talking about myself. I can easily say, "My English is good, and I didn't quit and I'm doing better tomorrow, and I'm doing better than the next session. I'm doing better than before." But at the same time, even when you say that, it made us think that, "Am I actually getting better," especially with the feedback we used to receive from you. We had to double think about the way we talk and the way we speak.

Participant:

I think it was really helpful reflecting on ourselves. With the reflection part, I think it was at the very end, when we read ... Me, myself, I went back to see my reflection from earlier pages, and I noticed that every single time I either have new issues that I discovered or I have an issue that I fixed. So I felt like, session after session, that was really beneficial for us. Yeah, in terms of improvement, at the end of the day, it goes back to us on how much we practice and what we do in our daily lives. Because even though we're still in Canada, sometimes we use our first language more than we use English because of friends, family, or whatever. It was still helpful. It helped a lot.

Wendy:

Yeah, so that's good feedback for me. That's really great. There was always a question as to whether or not ... In this situation, you were in control of your own learning, right?

Participant:

Yeah.

Wendy:

Students are always asking the teacher to tell them what they need to do, so "You tell me what's wrong with my pronunciation. You tell me what I should do to fix it." But in this exercise, in this module, I didn't do that. I left that up to you. The way you were graded in that was through the reflection, and I was looking for certain things, that you actually were able to assess the activity and to find goals, to set goals for improvement, and to actually do those things, and then to look back to see if you had done them. We were looking at that kind of thing. How did you feel about that? Did you feel that I was just not being a teacher or I was just-

Participant:

No, I would say the exact opposite of that because, at the end of the day, it makes you notice who is willing to improve or not. When I look back at my portfolio and the videos I uploaded, I saw those issues. I don't know if you still remember, but almost after every class, I went back to you, and I asked you how to fix it. With that, you helped me a lot. For these students that don't go and ask for feedback, for specific feedback on a specific issue they have noticed through the portfolio, that shows you that, even if you did your best and give them all the help you can give them, they still might not improve because they don't want to.

Wendy:

Well, yeah. That's interesting. You came, and you asked specific questions.

Participant:

About the specific issues that I've noticed in my reflection on how I used to speak and all that, yeah.

Wendy:

Those are things that you noticed, and then you came and talked to me about it, as opposed to me noticing them and suggesting to you. Yeah, that's right. That's exactly right.

Participant:

I feel like when you're in ESL 1900, in this course, it's about time you fix your accent or you fix the way you speak and the way you write on yourself. In 1300 and 1500, I feel like that's when the professor should go after us and be like, "Fix this. Fix that." But in 1900, I feel like we did a lot of assignments. We did a lot of practice, and we should be ready to evaluate ourselves and improve ourselves and practice just ourselves in our daily life, not just inside the classroom or in front of the professor.

Wendy:

What are you studying, Participant? I can't remember what you're in.

Participant:

Right now, I'm in political science. I study political science.

Wendy:

You must be doing a lot of writing and-

Participant:

A lot of writing, yes.

Wendy:

Do they deal with your grammar or anything like that, any mistakes like that?

Participant:

I did have some mistakes. Well, I had to learn in the first two years. Like I said-

Wendy:

So you took responsibility, then, for those errors. You had to clean up your writing.

Participant:

Yes. Mostly, the political science professors, they don't really have time to fix how you write or how you speak or anything. They have to fix the way you think about specific theory or your understanding in terms of a specific event or anything, or a policy. They don't really have the time to just sit down and talk you through how to write an essay-

Wendy:

Fix your grammar.

Participant:

Yeah, on how to write an essay. That doesn't happen. But for me personally, we have the TAs, obviously. With the TAs, I made sure I asked them as many questions as I can on how to write an essay, how to improve my thesis statement, how to start an essay, how to end it, the conclusion. I made sure I can get all the help-

Wendy:

Right. So again, you asked for specific advice in your-

Participant:

Exactly. But no one was there just to fix these things with me.

Wendy:

Right. So again, you had to know what to ask for.

Participant:

Exactly.

Wendy:

You couldn't just say, "Here's my essay. What will I do to make it better?" You can't do that. You have to-

Participant:

Exactly, yeah. A lot of people would hand in an essay. They would get a C plus and be like, "Okay, that's my best. That's as much as I can give." I was never like that. I was like, "Okay, I got a C plus. How do I get it to B minus next time? How do I get a B plus?" I struggled a bit in the first two years, but on my third year and now, I feel like it's got a lot better. Obviously, there's always room for improvement, but it got a lot better from when I started.

Wendy:

I'm sure you have. I'm sure you have over those. Have you used the e-portfolio in any of your classes?

Participant:

Not for politics, no.

Wendy:

They haven't asked you to do anything with that?

Participant:

No, they haven't.

Wendy:

Have you ever gone back to look at the port because you still have access to your portfolio?

Participant:

I still have access to it. Yeah, I did. In my last job, we were working on a portfolio for the department. We went through Carlton portfolio, and I just looked at it. I was like, "Okay, this is still here." I opened it. I looked through it. Even back then, when I heard me speaking, I also was able to point out more things that I don't do now, or things that was I was struggling with, and I was able to fix it.

Wendy:

What do you think about having that record? You have that record now, and you'll have it for two years after you graduate. You'll have it.

Participant:

Yeah, it's amazing. It's amazing because I feel like somehow it gives you hope, and it shows you that, "Look where you were. Look where you're at now." At the same time, it actually shows you how much you improved over the years. It shows you that the practice you did was worth it.

Wendy:

Paid off.

Participant:

Yeah, it was really helpful.

Wendy:

Yeah, that's interesting. I think the portfolio is a great way to house it because you get to see this thing over time, and you can go back and look at it. You can see how you've improved and what you've done.

Participant:

Yes, and it's over a specific timeline. I think we had one every one week.

Wendy:

Pardon?

Participant:

I think we had to submit one every two weeks.

Wendy:

Yeah. Let's see. We were winter, so it wasn't quite every two weeks, but I think we had five or six. Well yeah, maybe it was every two weeks. Yeah, it was something like every two weeks because it was six, I think, over the 12 weeks that we did. Some of them were more intense than others and stuff.

Participant:

Yeah. No, that's true. I love the fact that the portfolio is a mixture of you speaking, and you writing, and you reflecting upon yourself. That was quite interesting. It was showing you how you used to speak, how you used to write. If you open the next page, it shows you how you were speaking and writing a month from that, a month later. It just shows you if you're improving month by month or week by week and like that.

Wendy:

I was wondering now, do you ever record yourself now, when you have to give presentations or anything like that? Do you use any of the strategies?

Participant:

I did. Last semester and this year, I don't have any of the courses that requires me to do a presentation.

Wendy:

Good.

Participant:

Yeah, thank God. But still after the 1900, when I finished the 1900 with you, I did try to record myself just to see the way I'm speaking. I did record myself, just to hear myself, saying specific words, just so I can listen to it back. I put it on the dictation or the Google translate. Google translate, not only translates the word, it also tells you how to say it properly. So I used to record myself saying it, and at the same time, I play it on Google translate to hear how it should be said. That helped me a lot. I used that technique for a few months after. It was still helpful.

Wendy:

So, the recording on that. I guess, next question, do you think using the e-portfolio helped you in any other areas of learning? I don't know what that means, actually.

Participant:

It was fun. It was something new. It was something that we don't do in every single course or class we take in university. It also gave us an opportunity to be creative. Like you said, there's so many ways to design your portfolio, and we did take the time to make it look better every single day. I think that's the best part about it, other than the fact that it's information about you talking and speaking, and it's all in the same place and you still have access to it until you graduate. That's obviously a good thing about the future.

Wendy:

Okay. Well, that's all. Can you think of anything else that I should-

Participant:

No.

Wendy:

Any drawbacks to it? Anything that you thought was ... The one thing about it was that if the student didn't engage with it, then they always told me there was a bug and the software didn't work. They always told me that, that there was-

Participant:

I used it. I think we used it, because I took the ESL 1500 with you as well-

Wendy:

Yes, and we used the same.

Participant:

Yeah, we did use the-

Wendy:

So you must have that first 1500, too, you can look at yourself, right?

Participant:

Yeah. Oh yeah, I do have that one as well.

Wendy:

Yeah, you should have a look.

Participant:

Yeah, for the 1500 and 1900, I can tell you that I never had an issue with the software. I don't know what they're talking about. At the end of the day, if they don't want to be good, if they don't want to improve, the students themselves, it's not going to happen.

Wendy:

That's right.

Participant:

At the end of the day, [crosstalk 00:18:35] you're diagnosing yourself.

Wendy:

Yeah, you are diagnosing yourself. Yeah. I guess, that's really the core of learning. You can't just-

Participant:

[crosstalk 00:18:43] someone to point out the things you have to do and things you're not doing. You have to be [crosstalk 00:18:52].

Wendy:

Yeah, you have to be very active in it, right?

Participant:

Exactly. You have to figure it out yourself.

Wendy:

Well, I think we're probably coming to the end of our 30 minutes. I'd just like to thank you. I really appreciate your taking the time out to talk to me.

Participant:

No problem at all. It was really good talking to you again.

## J The selection process

